

6
5
4
3
2
1

No.01

Oki Data CONFIDENTIAL

B4350(PN272)
Monochrome LED Page Printer
Maintenance Manual

ODA/OEL/AOS

[Rev. 3]

BOM		Use for		Certification Body	
Rev	Date	DCO No.	Contents	Design	Approval
2	2005-01-31	SL2-0558	Addition of VE PCB,etc	Yasuhiro Shimizu	Yasuhiro Shimizu
3	2005-03-28	SL2-0584	Page42,Addition of new spare part No.	Yasuhiro Shimizu	Yasuhiro Shimizu
Approval Hisao Ono			Design Hisao Ono	Name B4350(PN272) Maintenance Manual	
Check					
Date 2004-04-14					
Okidata Corporation			Drawing No. 42641101TH		1/164

Document Revision History

[illegible]

PREFACE

This Maintenance Manual describes the field maintenance methods for B4350 Monochrome LED Page Printers.

This manual is written for use by service persons. Please note that you should refer to the Printer Handbook for the handling and operating methods of the equipment.

CONTENTS

1. CONFIGURATION	7
1.1 System Configuration	7
1.2 Printer Configuration	8
1.3 Optional Configuration	9
1.4 Specification	11
1.5 Safety Standards	13
1.5.1 Certification Label	13
1.5.2 Warning Label	13
1.5.3 Warning/Caution Marking	14
2. PARTS REPLACEMENT	15
2.1 Precautions for Parts Replacement	15
2.2 Parts Layout	17
2.3 How to Change Parts	20
2.3.1 Upper Cover Assy	21
2.3.2 LED Head	22
2.3.3 Operator Panel Assy	23
2.3.4 Lower Base Unit	24
2.3.5 Pulse Motor (Main/Drum)	25
2.3.6 Pulse Motor (Registration)	26
2.3.7 Pulse Motor (Hopping)	27
2.3.8 Face Up Stacker Assy	28
2.3.9 Eject Roller Assy	29
2.3.10 Motor Assy	30
2.3.11 Hopping Roller Shaft Assy	31
2.3.12 Stacker Cover Assy	32
2.3.13 Registration Roller	33
2.3.14 Roller Transfer Assy	34
2.3.15 Fusing Unit	35
2.3.16 Back-up Roller	36
2.3.17 Sensor Plate (Inlet)	37
2.3.18 Sensor Plate (Outlet), Sensor Wire Assy	38
2.3.19 Manual Feed Guide Assy	39
2.3.20 Sensor Plate (Paper Supply)	40
2.3.21 GRV-2 PCB/GRR-2 PCB	41
2.3.22 Power Supply Board and High Voltage/Sensor Board	43
2.3.23 Cassette Guide L Assy	44
2.3.24 Cassette Guide R Assy	45
3. ADJUSTMENT	46
3.1 Maintenance Modes and Functions	46
3.1.1 User Maintenance Mode (Administrator Menu)	46
3.1.2 System Maintenance Mode (System Maintenance Menu)	47
3.1.3 EEPROM Initial Setting Range for Events	49
3.2 Adjustment When Replacing a Part	50
3.2.1 Uploading/Downloading EEPROM data	50
4. PERIODICAL MAINTENANCE	51
4.1 Periodical Replacement Parts	51

4.2	Cleaning	51
4.2.1	Cleaning of LED Lens Array	51
4.2.2	Cleaning Page Function	52
5.	TROUBLESHOOTING PROCEDURES	53
5.1	Troubleshooting Tips	53
5.2	Points to Check before Correcting Image Problems	53
5.3	Tips for Correcting Image Problems	53
5.4	Preparation for Troubleshooting	54
5.5	Troubleshooting Flow	54
5.5.1	LCD Status Message/Problem List	54
5.5.2	LCD Message Troubleshooting	60
5.5.3	Image Troubleshooting	68
6.	WIRING DIAGRAM	77
6.1	Interconnect Signal Diagram	77
6.2	PCB Layout and Connector Signal List	78
6.3	Resistance Check	90
	APPENDIX ARS-232C SERIAL INTERFACE (OPTION)	92
	APPENDIX BCENTRONICS PARALLEL INTERFACE	97
	APPENDIX CUNIVERSAL SERIAL BUS (USB)	106
	APPENDIX DLOOP TEST (RS-232C INTERFACE)	112
	APPENDIX EDIAGNOSTICS TEST	113
	APPENDIX F MULTI PURPOSE FEEDER MAINTENANCE	123
1.	OUTLINE	123
1.1	Functions	123
1.2	External View and Component Names	123
2.	MECHANISM DESCRIPTION	124
2.1	General Mechanism	124
2.2	Hopper Mechanism	124
3.	PARTS REPLACEMENT	125
3.1	Precautions Concerning Parts Replacement	125
3.2	Parts Layout	126
3.3.1	Link	127
3.3	Parts Replacement Methods	127
3.3.2	Separator	128
3.3.3	OLEV-11-PCB	129
3.3.4	Pulse Motor	130
3.3.5	Planet Gear	131
3.3.6	Roller-A and B	132
4.	TROUBLESHOOTING	133
4.1	Precautions Prior to the Troubleshooting	133
4.2	Preparations for the Troubleshooting	133
4.3	Troubleshooting Method	134
4.3.1	LCD Status Message List	134

5.	CONNECTION DIAGRAM	136
5.1	Interconnection Diagram	136
5.2	PCB Layout	136
6.	PARTS LIST	137

APPENDIX G HIGH CAPACITY SECOND PAPER FEEDER 139

1.	OUTLINE	139
1.1	Functions	139
1.2	External View and Component Names	139
2.	MECHANISM DESCRIPTION	140
2.1	General Mechanism	140
2.2	Hopper Mechanism	140
3.	PARTS REPLACEMENT	141
3.1	Precautions Concerning Parts Replacement	141
3.2	Parts Layout	142
3.3	Parts Replacement Methods	143
3.3.1	Stepping Motor (Hopping)	144
3.3.2	TQSB-2 PCB	146
3.3.3	Hopping Roller Shaft Assy and One-way Clutch Gear	146
4.	TROUBLESHOOTING	147
4.1	Precautions Prior to the Troubleshooting	147
4.2	Preparations for the Troubleshooting	147
4.3	Troubleshooting Method	148
4.3.1	LCD Status Message List	148
5.	CONNECTION DIAGRAM	150
5.1	Interconnection Diagram	150
5.2	PCB Layout	150
6.	PARTS LIST	151

APPENDIX H NETWORK INTERFACE (OPTION) 157

1. CONFIGURATION

1.1 System Configuration

B4350 consists of control and engine blocks in the standard configuration, as shown in Figure 1-1.

In addition, the options marked with asterisk(*) are available.

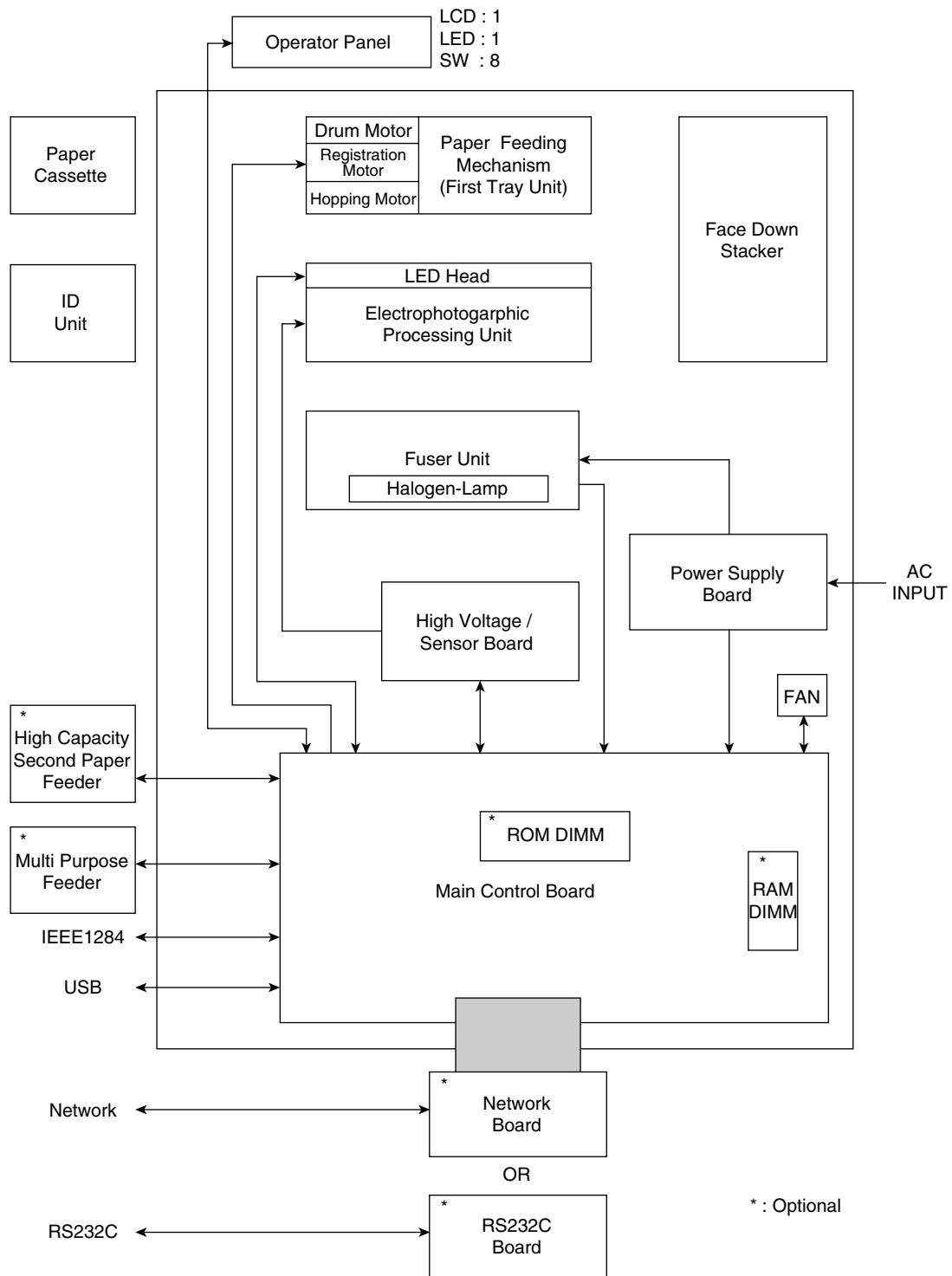


Figure 1-1

1.2 Printer Configuration

The printer unit consists of the following hardware components:

- Electrophotographic Processor
- Paper Feeder
- Controller
- Operator Panel
- Power Supply Unit

The printer unit configuration is shown in Figure 1-2.

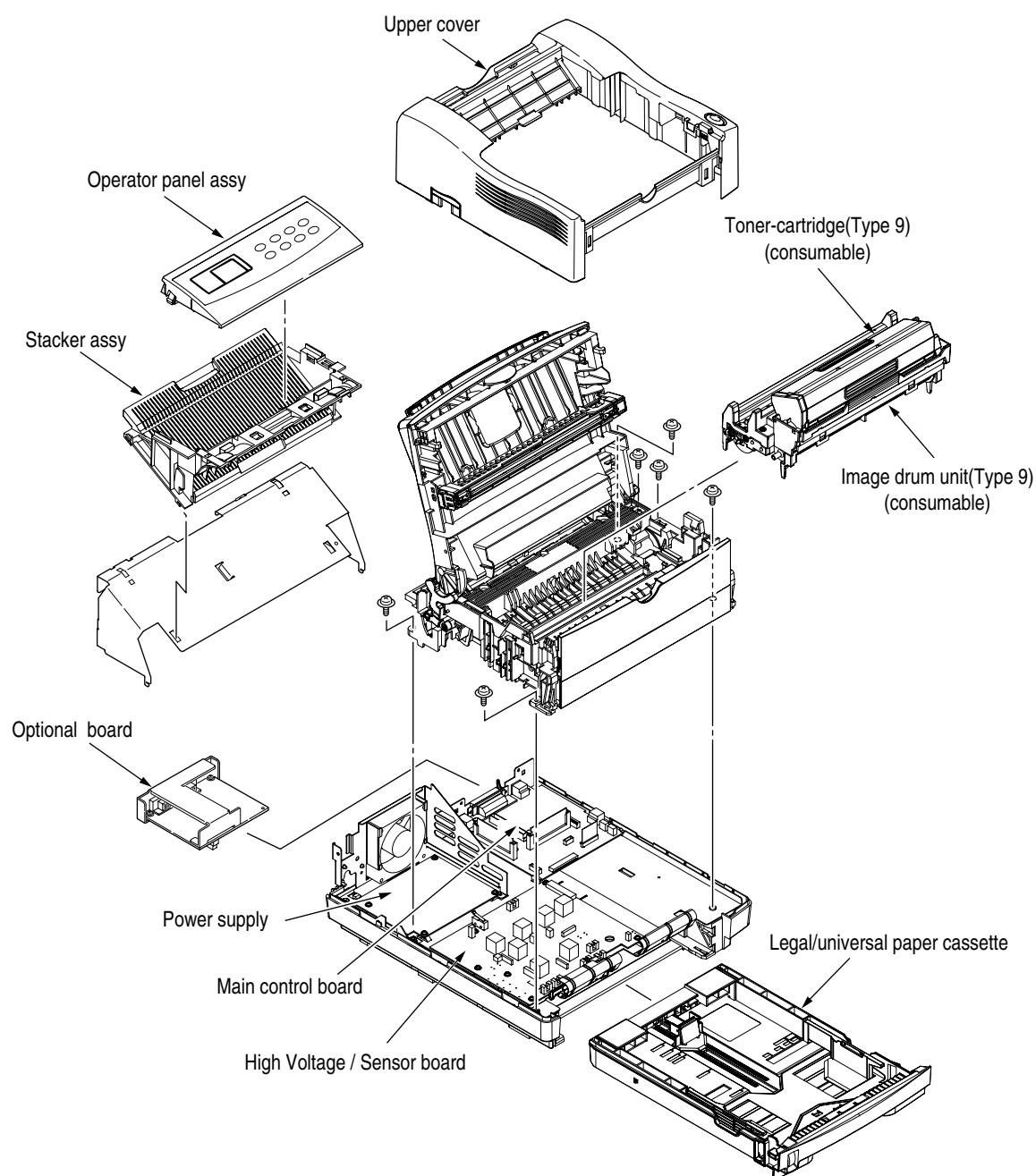
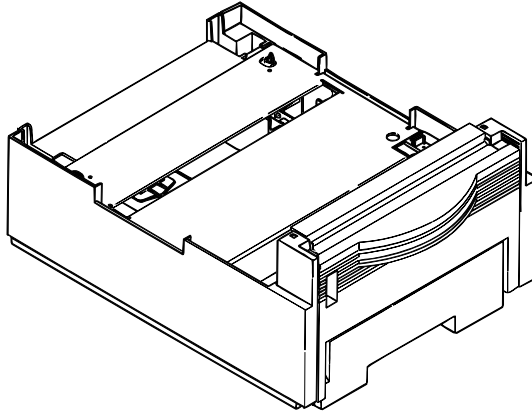


Figure 1-2

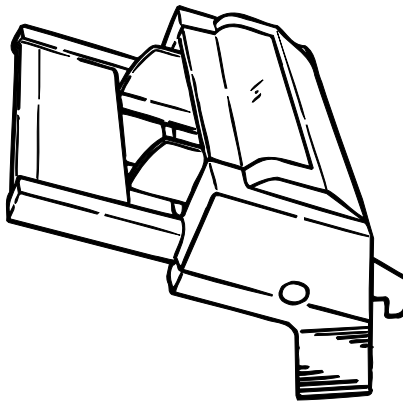
1.3 Optional Configuration

The options shown below are available for use with B4350. These are available separately from the printer unit.

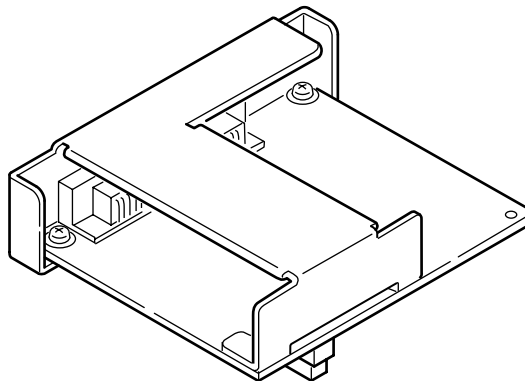
(1) High Capacity Second Paper Feeder



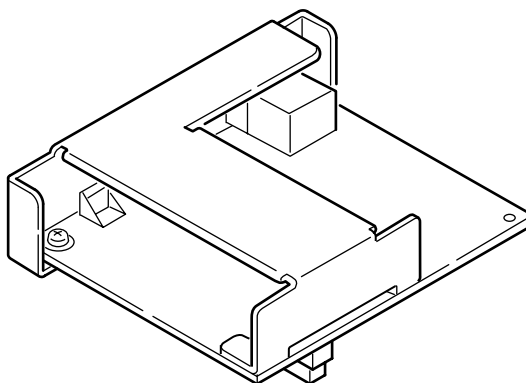
(2) Multi Purpose Feeder



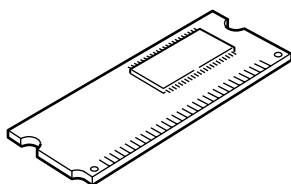
(3) RS-232C Serial Interface Board



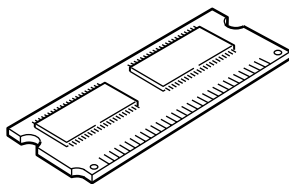
(4) Network Interface Board(Soft NIC CARD)



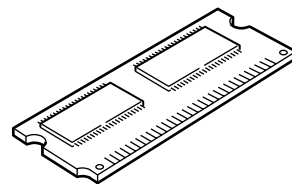
(5) SDRAM DIMM



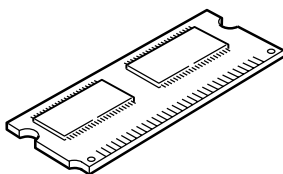
(i) 16MB



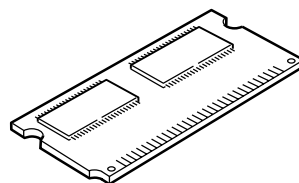
(ii) 32MB



(iii) 64MB

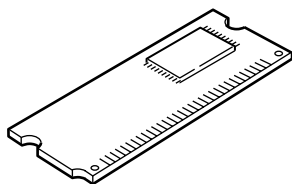


(iv) 128MB

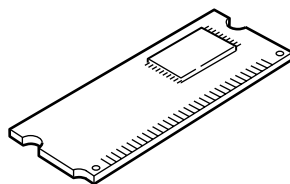


(v) 256MB

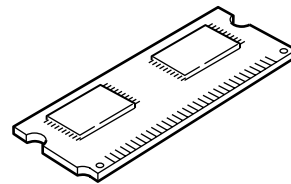
(6) Flash DIMM



(i) 1MB

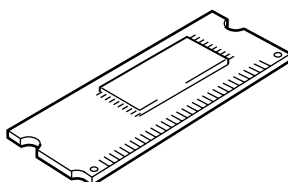


(ii) 8MB



(iii) 16MB

(7) Postscript 3 Emulation DIMM



1.4 Specification

(1) Type	Desktop
(2) External dimensions	Height 8.5" (215 mm) Width 14.0" (355 mm) Depth 15.7" (400 mm)
(3) Weight	Approx. 9 kg
(4) Developing method Exposing method	Dry electrophotography LED stationary head
(5) Paper used	<p><Type></p> <ul style="list-style-type: none"> Standard paper <ul style="list-style-type: none"> Xerox 4200 (20 lbs) Application paper (manual face-up feed) <ul style="list-style-type: none"> Label Envelope OHP paper (transparency) <p><Size></p> <ul style="list-style-type: none"> Standard sizes <ul style="list-style-type: none"> Letter Legal* [* Without Multi Purpose Feeder (Option)] Legal-13* Executive COM-9 ** COM-10** [** manual feed and Multi Purpose Feeder (option) only] Monarch** DL ** C5** A4 A5 B5 (JIS) A6 Applicable sizes <ul style="list-style-type: none"> Width : 3.5" to 8.5" (90 to 216 mm) Length : 5.8" to 14" (148 to 355.6 mm) <p><Thickness></p> <ul style="list-style-type: none"> Automatic feed : 16 to 28 lbs (60 to 105 g/m²) Manual feed : Label, OHP paper (transparency) Envelope (24 to 28 lbs)
(6) Printing speed	<p>Continuous printing : 23 pages per minute with Letter size paper. 22 pages per minute with A4 size paper. [Except, Multi purpose Feeder (14ppm) with Letter size paper]</p> <p>Warm-up time : 35 seconds typical at room temperature [68°F (20°C), AC 120/230 V].</p> <p>First page print time : 6.0 seconds typical for the Letter size paper (6.2 seconds for the A4 size) after warm-up.</p>
(7) Paper feeding method	Automatic feed or manual feed
(8) Paper delivery method	Face down/face up
(9) Resolution	600 × 600 dots/inch 600 × 1200 dots/inch

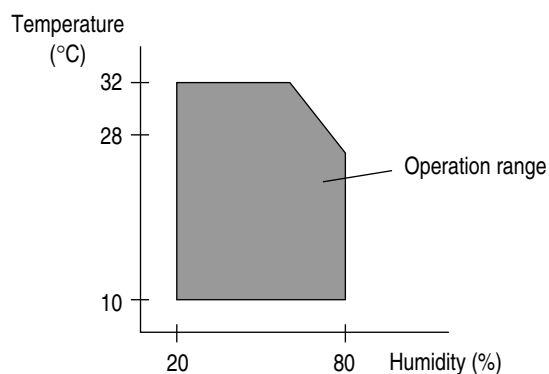
(10) Power input 110~127 VAC \pm 10%
 220~240 VAC \pm 10%

(11) Power consumption		120VAC	230VAC
Peak	:	Approx. 700W	Approx. 700W
Typical operation	:	Approx. 360W	Approx. 360W
Idle	:	Approx. 68W	Approx. 66W
Power save mode	:	Approx. 9W	Approx. 10W
(Without option)			
Power save mode	:	Approx. 13W	Approx. 14W
(With full option)			

(12) Temperature and humidity

	In operation	Power off mode	During Storage	Unit
Temperature	50-90 (10-32)	32-110 (0-43)	14-110 (-10-43)	°F (°C)
Humidity	20-80	10-90	10-90	%RH
Maximum wet bulb temperature	77 (25)	80.4 (26.8)	—	°F (°C)
Minimum difference between wet and dry bulb temperatures	35.6 (2)	35.6 (2)	—	°F (°C)

1. Storage conditions specified above apply to printers in packed condition.
2. Temperature and humidity must be in the range where no condensation occurs.



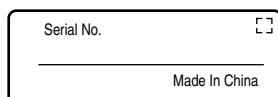
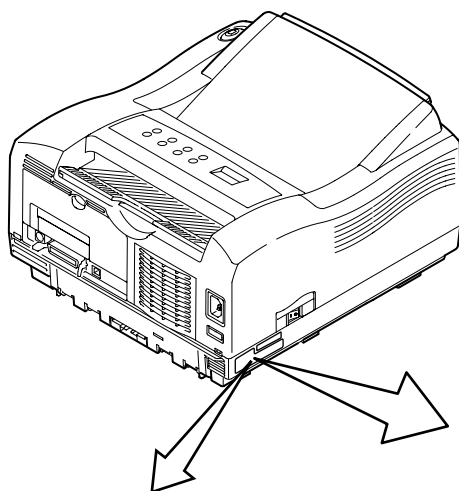
(13) Noise	During operation	: 53 dB (A) or less
	Standby	: 38 dB (A) or less
	Quiet mode	: Back ground level

(14) Consumables	Toner cartridge kit	2,500 (5% duty) 6,000 (Optional 6K Toner 5% duty)
	Image drum cartridge	25,000 (at continuouts printing) 17,000 (3 page/job) without Power Save 11,000 (1 page/job) without Power Save 7,000 (1 page/job) with Power Save (Minimum)

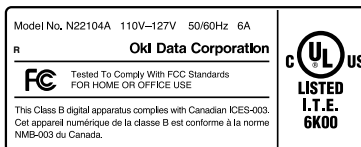
1.5 Safety Standards

1.5.1 Certification Label

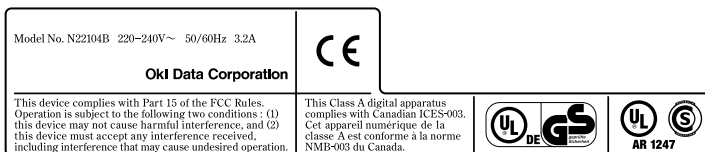
The safety certification label is affixed to the printer in the position described below.



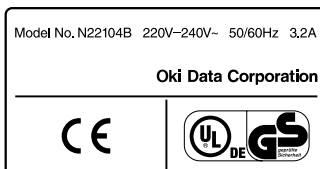
ODA AC : 120V model



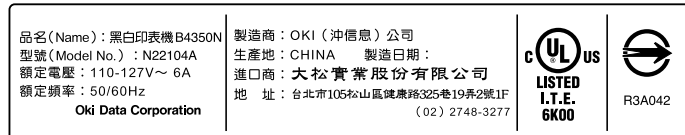
ODA AC : 230V model



OEL AC : 230V model



Taiwan AC : 120V model



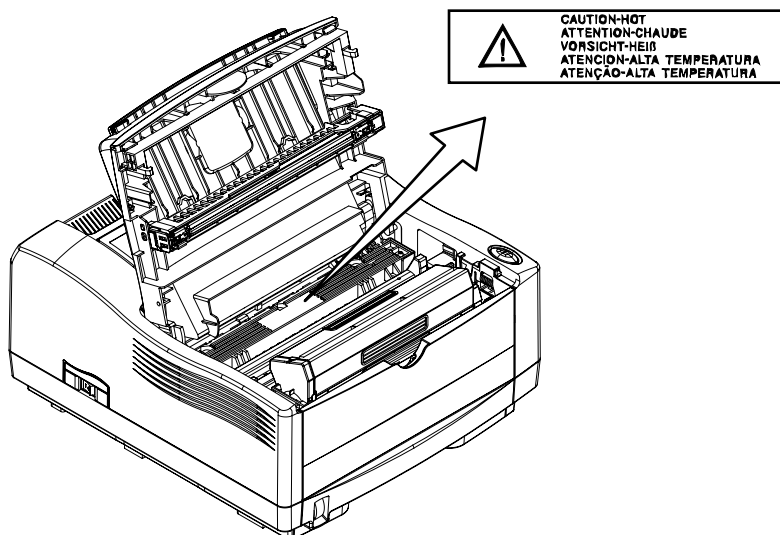
AOS AC : 230V model



1.5.2 Warning Label

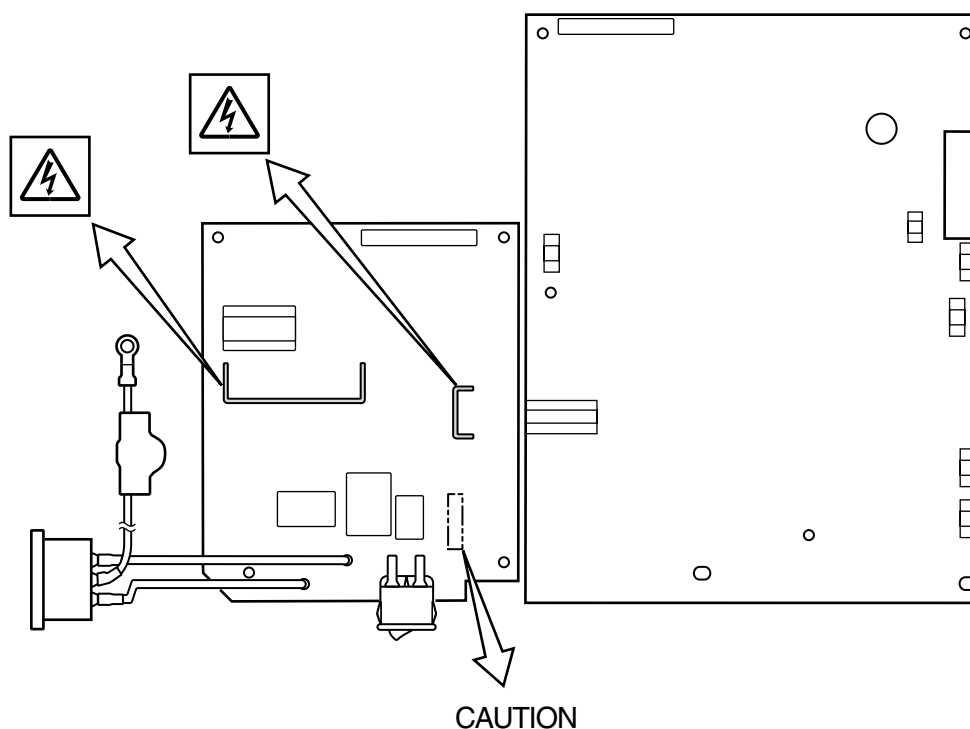
The warning labels are affixed to the sections which may cause bodily injury.

Follow the instructions on warning labels during maintenance.



1.5.3 Warning/Caution Marking

The following warning and caution markings are made on the power supply/sensor board.



ENGLISH

Heatsink and transformer core present risk of electric shock. Test before touching.

FRENCH

Le dissipateur thermique et le noyau du transformateur présentent des risques de choc électrique. Testez avant de manipuler.

SPANISH

Las disipadores de calor y el núcleo del transformador pueden producir un choque eléctrico. Compruebe antes de tocar.

PORTUGUESE

O dissipador de calor e o núcleo do transformador apresentam risco de choque elétrico. Teste antes de tocar.

ENGLISH

Circuits maybe live after fuses open.

FRENCH

Il se peut que les circuits soient sous tension une fois que les fusibles ont été retirés.

SPANISH

Las circuitos pueden estar activos una vez que se hayan abierto los fusibles.

PORTUGUESE

Os circuitos podem estar energizados após os fusíveis se queimarem.

2. PARTS REPLACEMENT

The section explains the procedures for replacement of parts, assemblies, and units in the field. Only the disassembly procedures are explained here. For reassembly, reverse the disassembly procedure.

2.1 Precautions for Parts Replacement

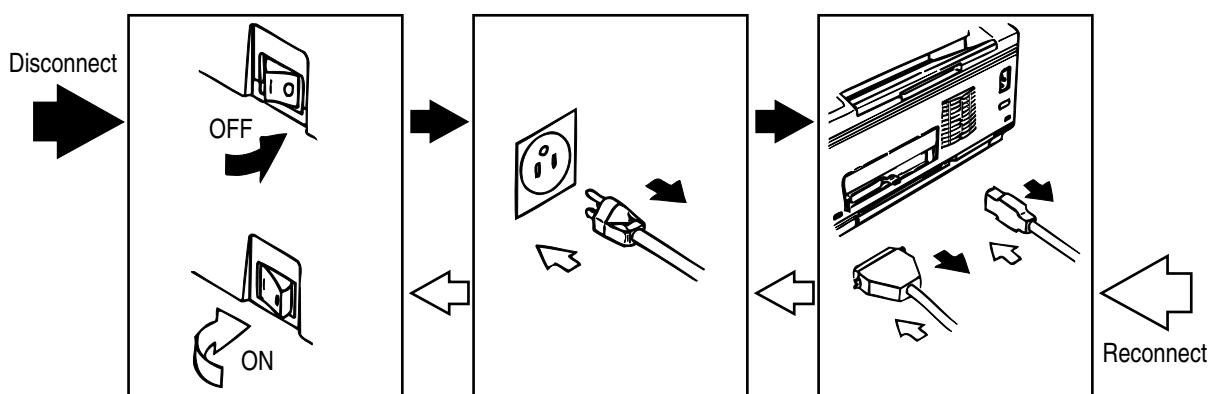
(1) Before starting to replace parts, remove the AC cord and interface cable.

(a) Remove the AC cord in the following sequence:

- i) Turn off ("o") the power switch of the printer
- ii) Disconnect the AC inlet plug of the AC cord from the AC receptacle.
- iii) Disconnect the AC cord and interface cable from the printer.

(b) Reconnect the printer in the following procedure.

- i) Connect the AC cord and interface cable to the printer.
- ii) Connect the AC inlet plug to the AC receptacle.
- iii) Turn on ("I") the power switch of the printer.

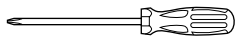
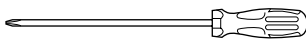

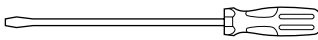

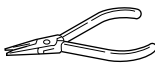
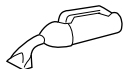
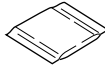


- (2) Do not disassemble the printer as long as it is operating normally.
- (3) Do not remove parts which do not have to be touched; try to keep the disassembly to a minimum.
- (4) Use specified service tools.
- (5) When disassembling, follow the laid out sequences. Parts may be damaged if these sequences are not followed.
- (6) Since screws, collars and other small parts are likely to be lost, they should temporarily be attached to the original positions during disassembly.
- (7) When handling IC's such as microprocessors, ROMs and RAMs, or circuit boards, do not wear gloves that are likely to generate static electricity.
- (8) Do not place printed circuit boards directly on the equipment or floor.

[Service Tools]

The tools required for field replacement of printed circuit boards, assemblies and units are listed in Table 2-1.

Table 2-1 Service Tools

No.	Service Tools	Q' ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2~2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3~5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 No. 5-200 screwdriver	1		
5	 Digital multimeter	1		
6	 Pliers	1		
7	 Handy cleaner	1		
8	 LED Head cleaner	1	Cleans LED head	

2.2 Parts Layout

This section explains the layout of main components of the equipment.

[Lower base unit]

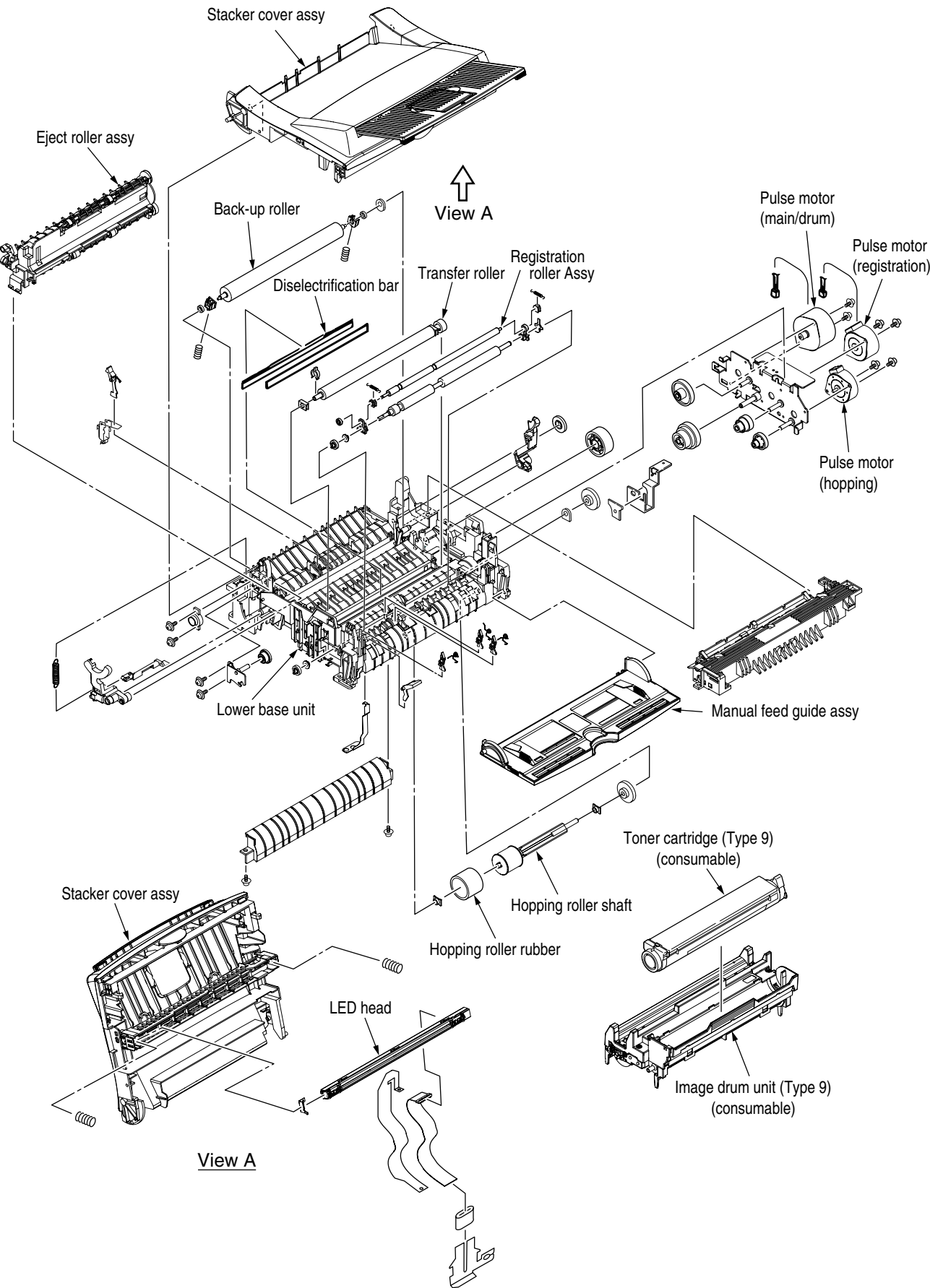


Figure 2-1

[Upper cover unit]

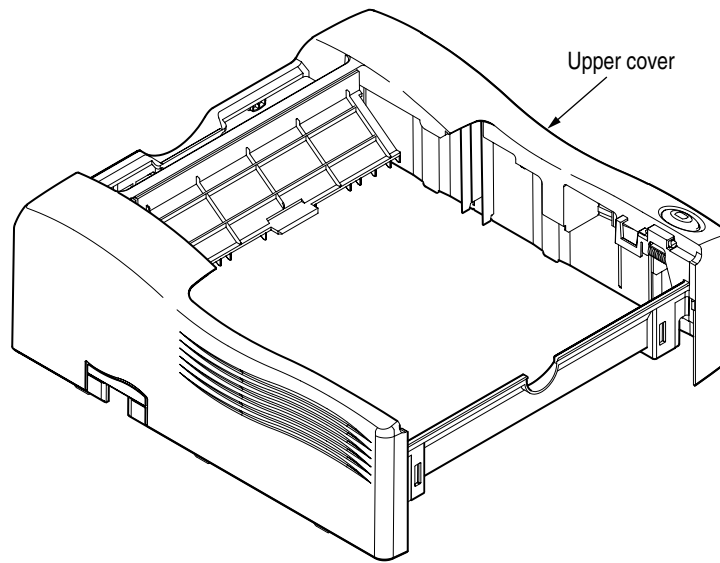


Figure 2-2

[Base unit]

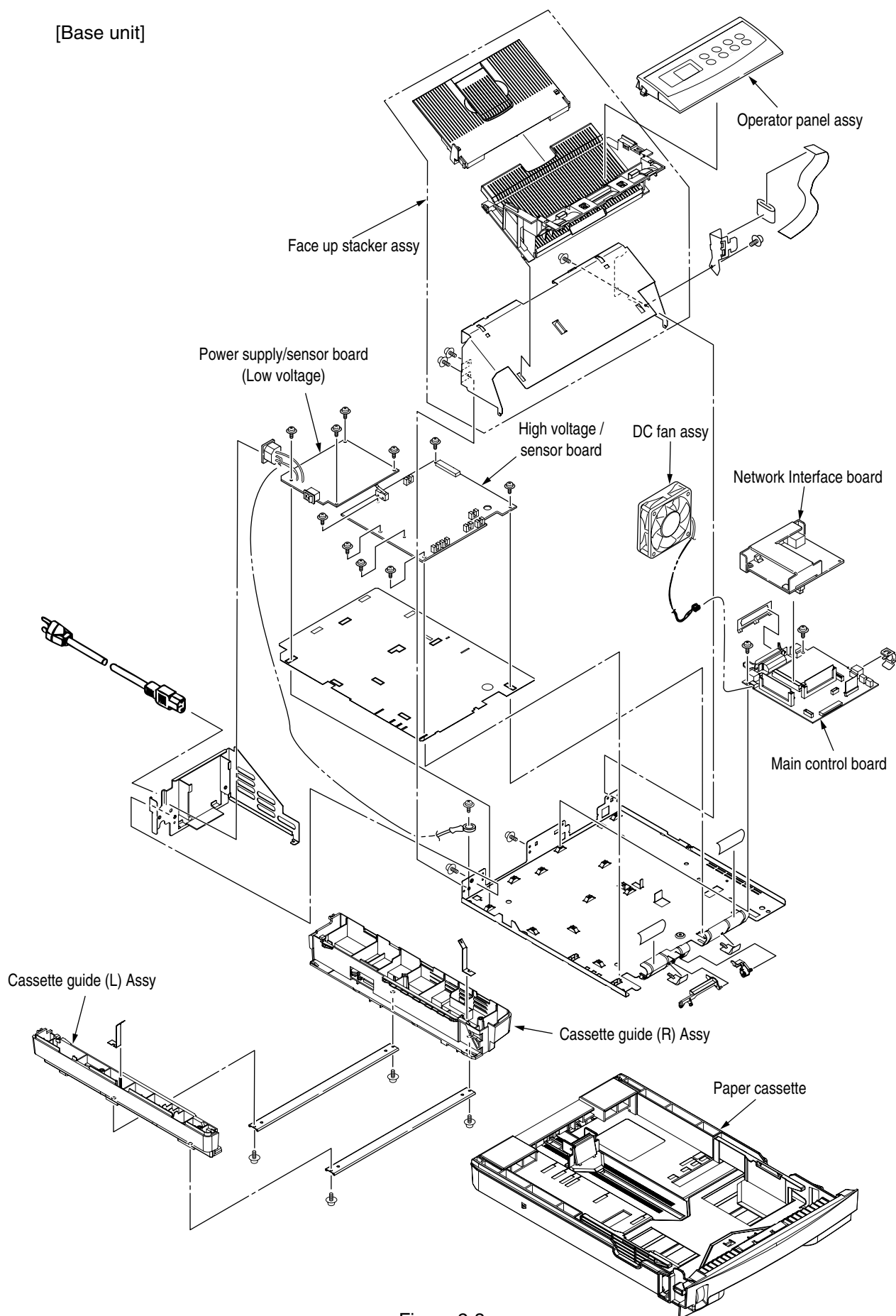
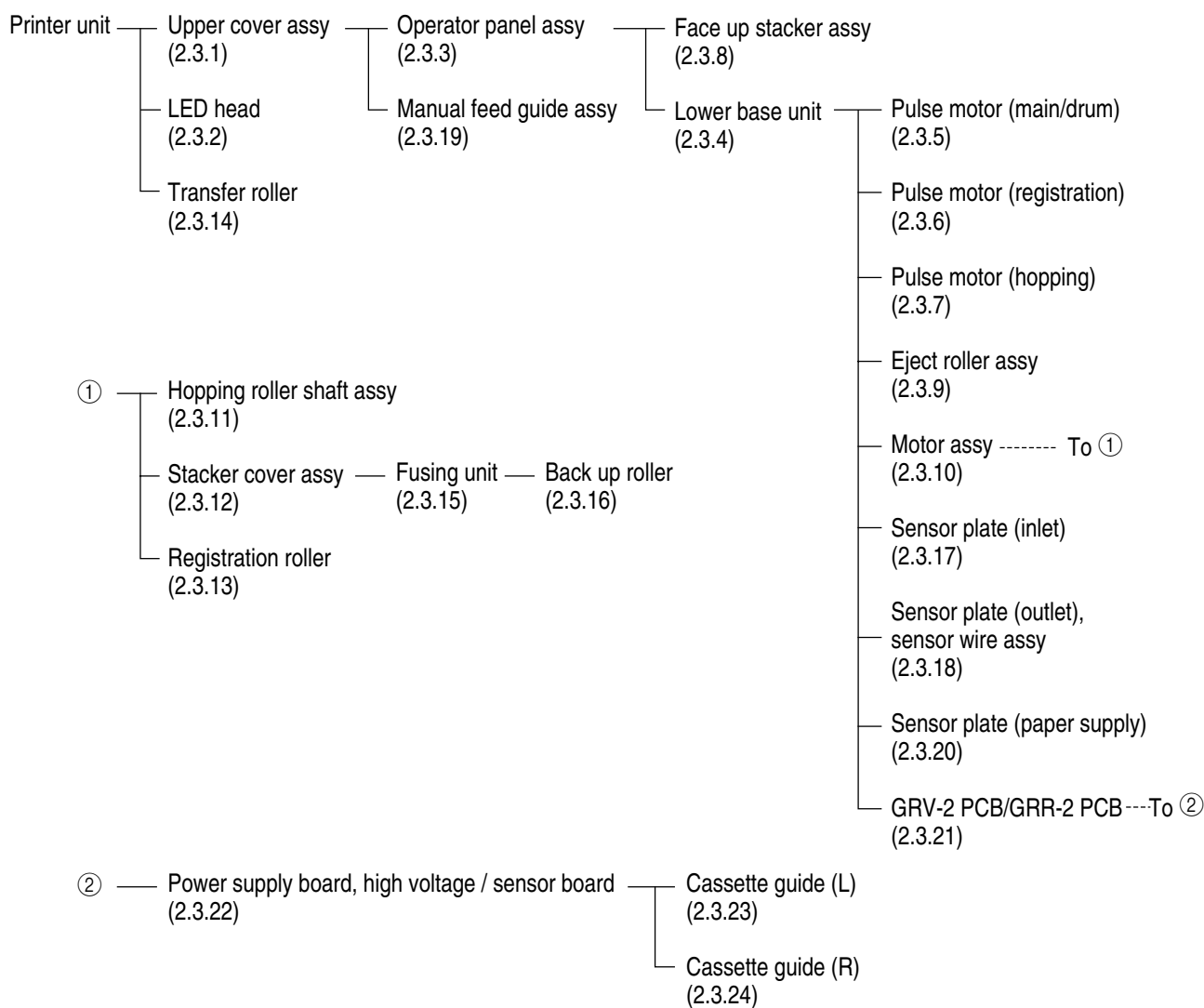


Figure 2-3

2.3 How to Change Parts

This section explains how to change parts and assemblies listed in the disassembly diagram below.

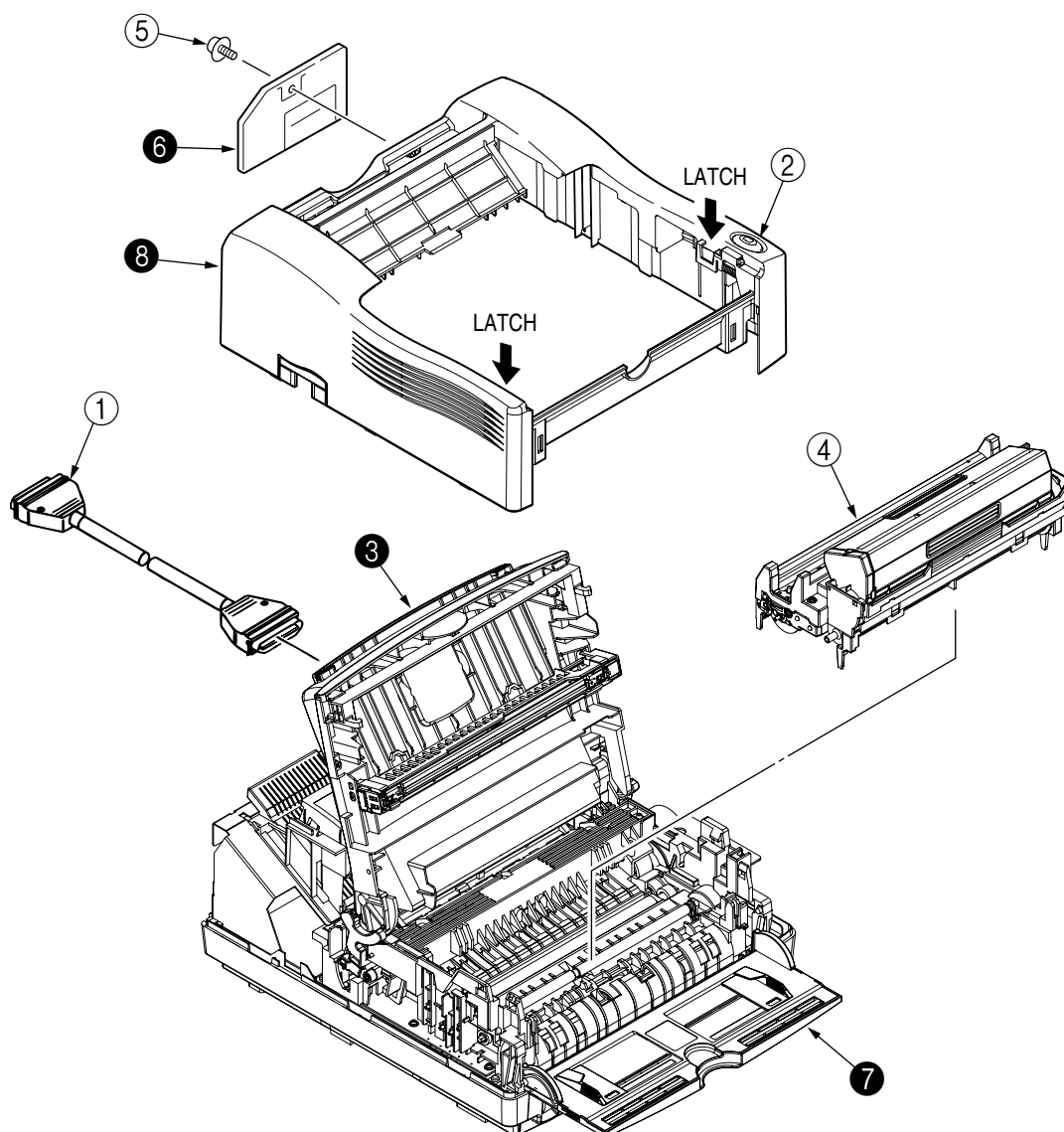
In the parts replacement procedure, those parts marked with the part number inside ● with white letters are RSPL parts.



2.3.1 Upper Cover Assy

- (1) With the power switch turned off, unplug the AC power cord from the outlet.
- (2) Disconnect the interface cable ①.
- (3) Press the button ② on right side of the Upper cover and open the stacker cover assy ③.
- (4) Take out the image drum unit ④.
- (5) Remove one screw ⑤, and remove the I/F cover ⑥ from the back side of the printer.
- (6) Open the manual feed guide assy ⑦. Unlock the latches at two locations on the front side. Lift the front side of the upper cover ⑧ up and unlock the latches at two locations on the back side. Lift and remove the upper cover assy ⑧.

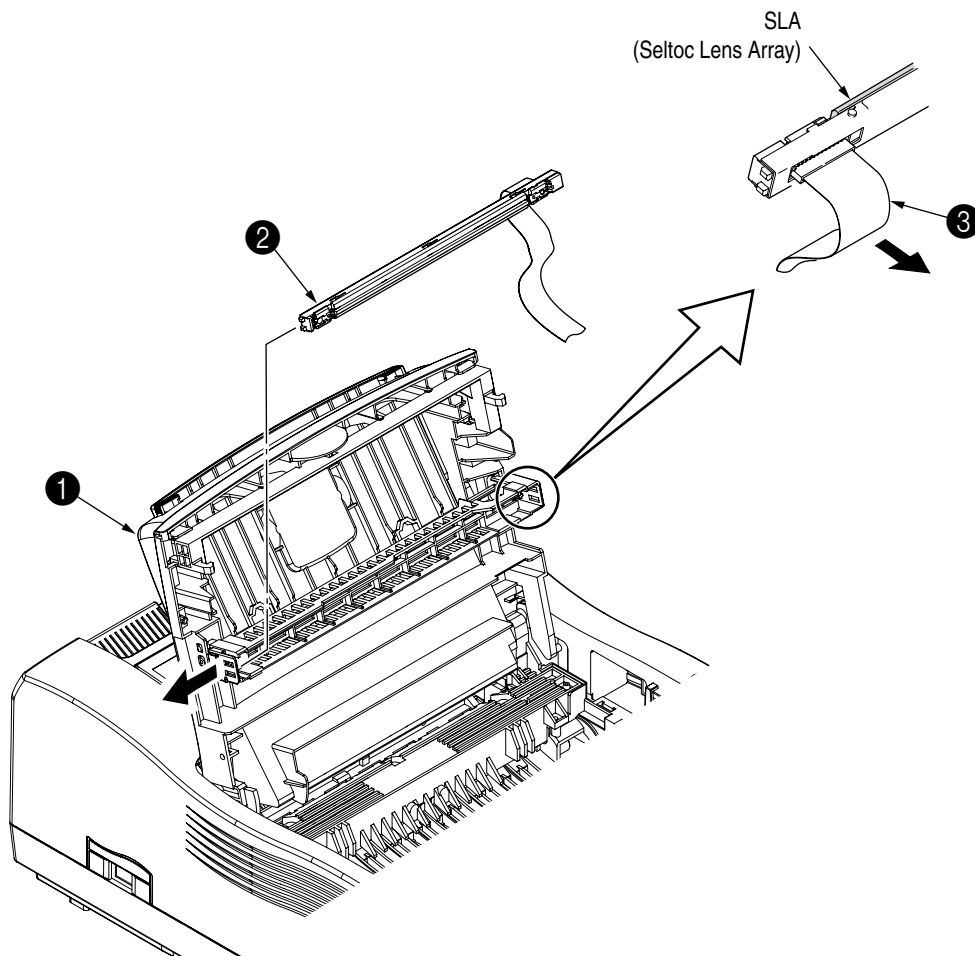
Note : When removing or reinstalling the upper cover, be careful not to get the motor cables tangled or caught.



2.3.2 LED Head

- (1) Press the button on right side of the upper cover and open the stacker cover assy ❶.
- (2) Open the hook section on the left side of the head holder and remove the LED head ❷.
- (3) Remove the head cable ❸ from the head connector.

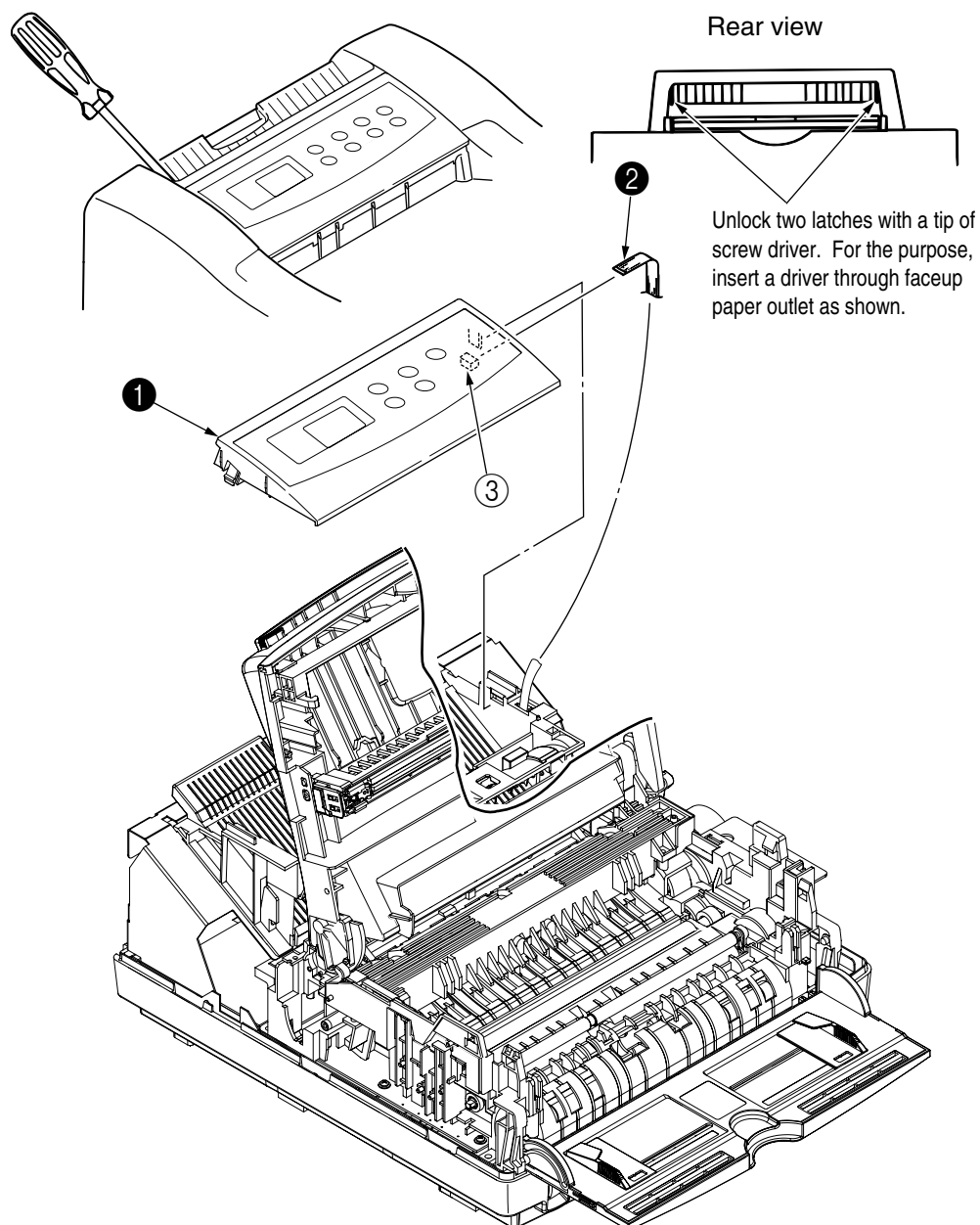
Note: Be sure not to touch directly or push on the SLA part of the LED head.



2.3.3 Operator Panel Assy

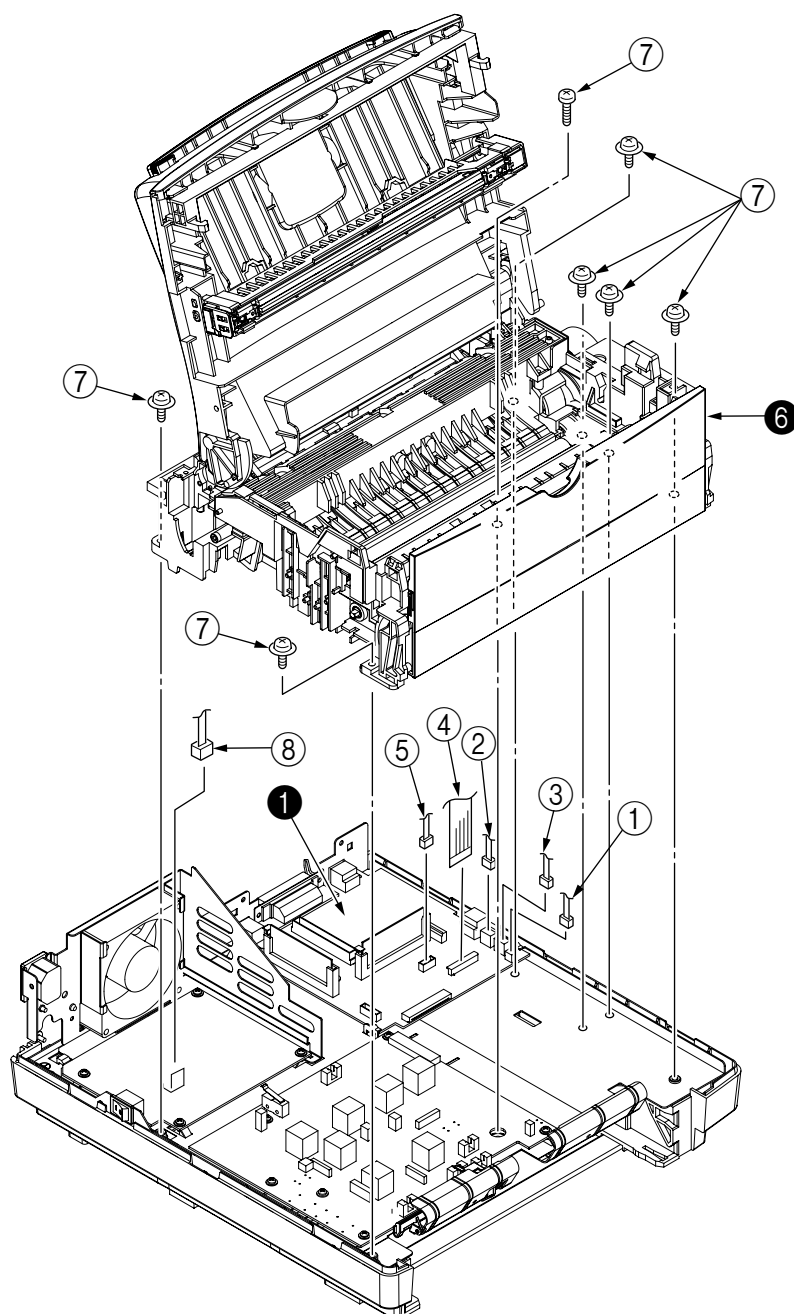
- (1) Unlock two latches on the upper cover from the rear side, lift the operator panel assy ❶ from the back and remove it.
- (2) Remove the Sumi card (operator panel) ❷ from the connector (CN1) ❸.

Note : You can remove the operator panel assy while the upper cover installed on the unit. However, it is much easier to remove the panel assy after removal of upper cover.



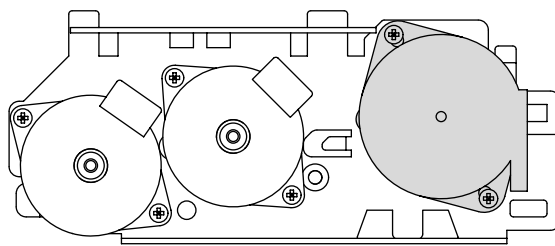
2.3.4 Lower Base Unit

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.7).
- (4) Remove the transfer roller assy (see 2.3.14).
- (5) Remove the connecting cables ①, ② and ③ of the pulse motors from the connectors (DM, RM, HM) of the GRV-2 PCB ①.
- (6) Remove the LED head cables ④ from the connector (HEAD).
- (7) Remove the Thermistor cable ⑤ from the connector (THERM).
- (8) Remove the connecting cable ⑧ of the heater from the connector (CN2).
- (9) Open the manual feed guide assy, remove seven screws ⑦, then remove the lower base unit ⑥.

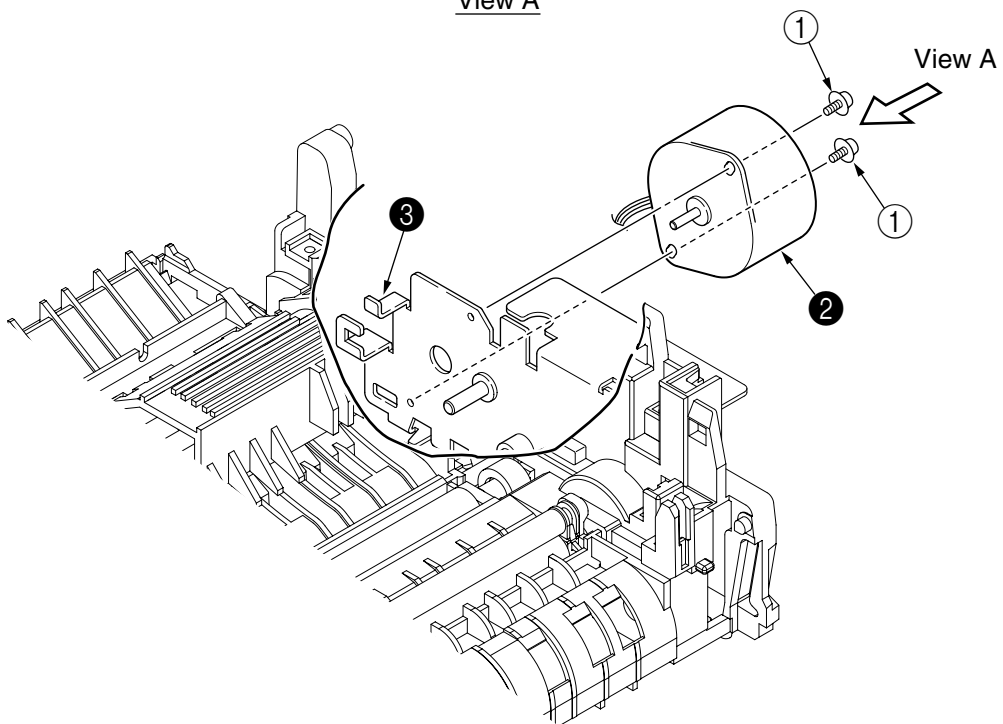


2.3.5 Pulse Motor (Main/Drum)

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the lower base unit (see 2.3.4).
- (3) Remove two screws ① and remove the pulse motor (main/drum) ② from the motor bracket ③.

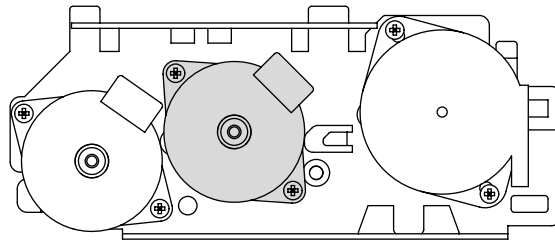


View A

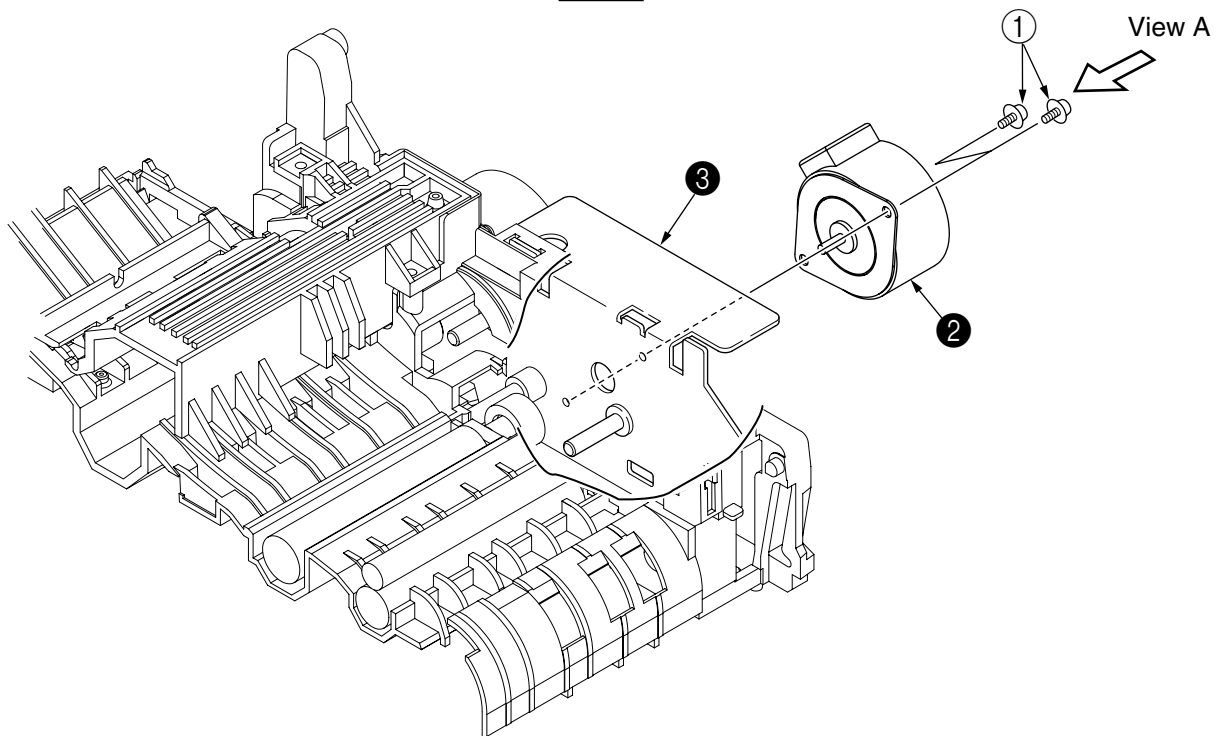


2.3.6 Pulse Motor (Registration)

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the lower base unit (see 2.3.4).
- (3) Remove two screws ① and remove the pulse motor (registration) ② from the motor bracket ③.

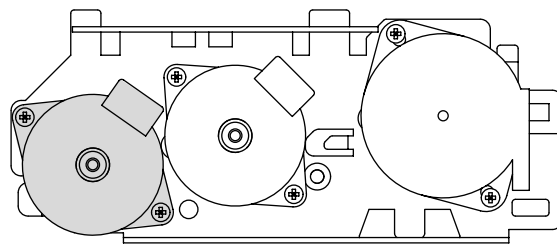


View A

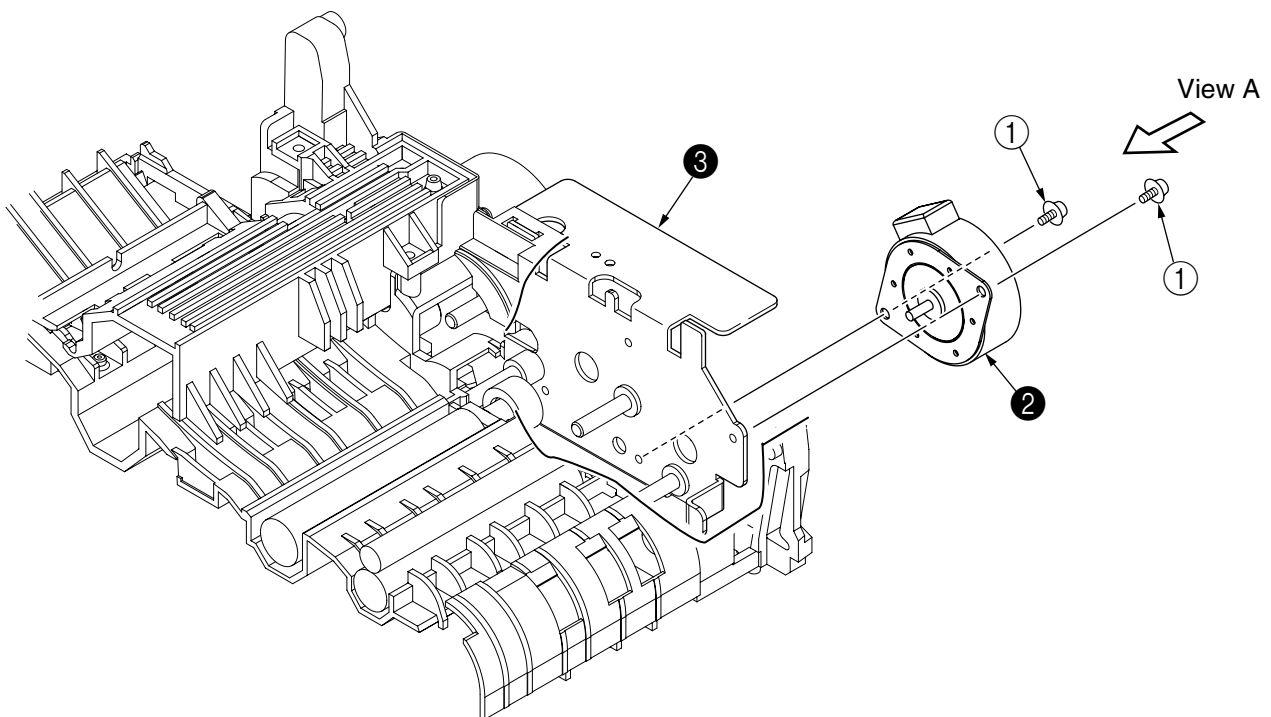


2.3.7 Pulse Motor (Hopping)

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the lower base unit (see 2.3.4).
- (3) Remove two screws ① and remove the pulse motor (hopping) ② from the motor bracket ③.

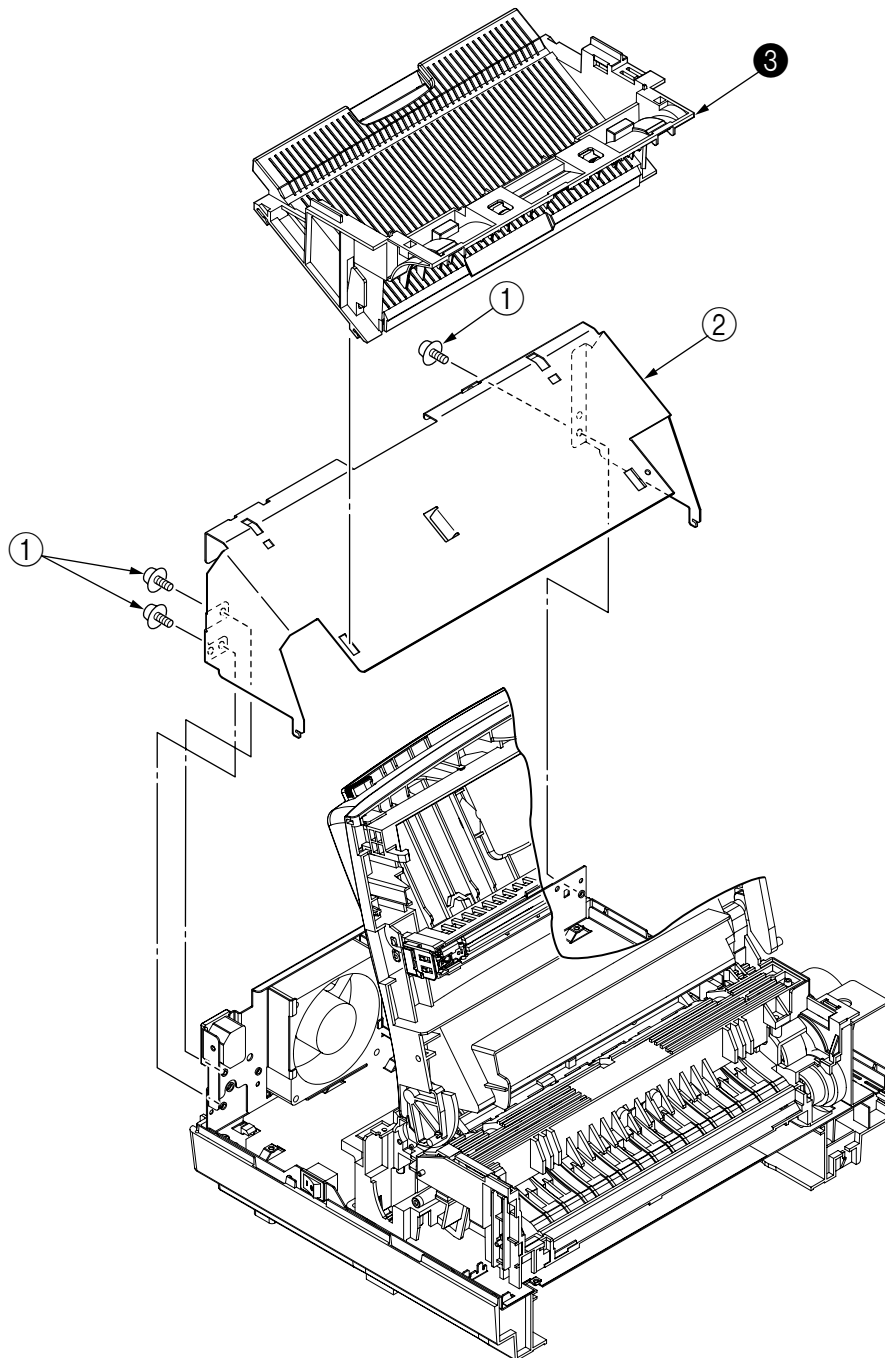


View A



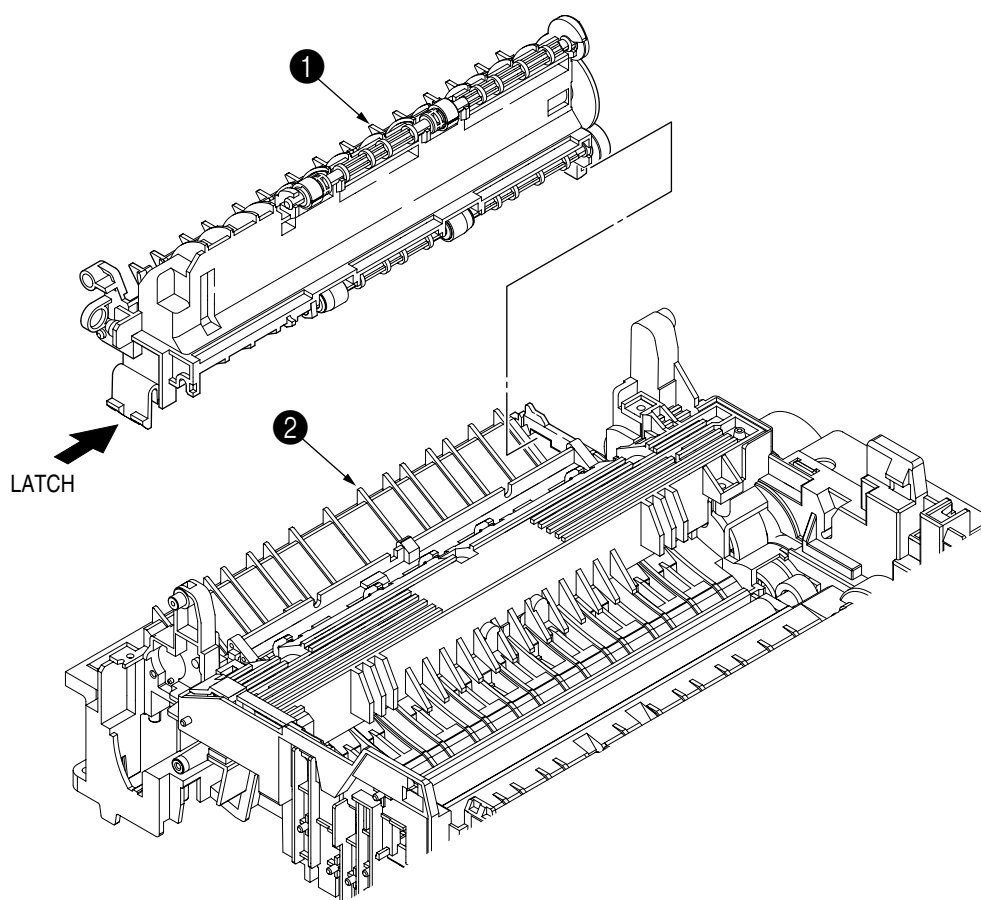
2.3.8 Face Up Stacker Assy

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove three screws ① and remove both the shield plate ② and face up stacker ③ together.
- (4) Unlock the latches at two locations, and remove the face up stacker ③.



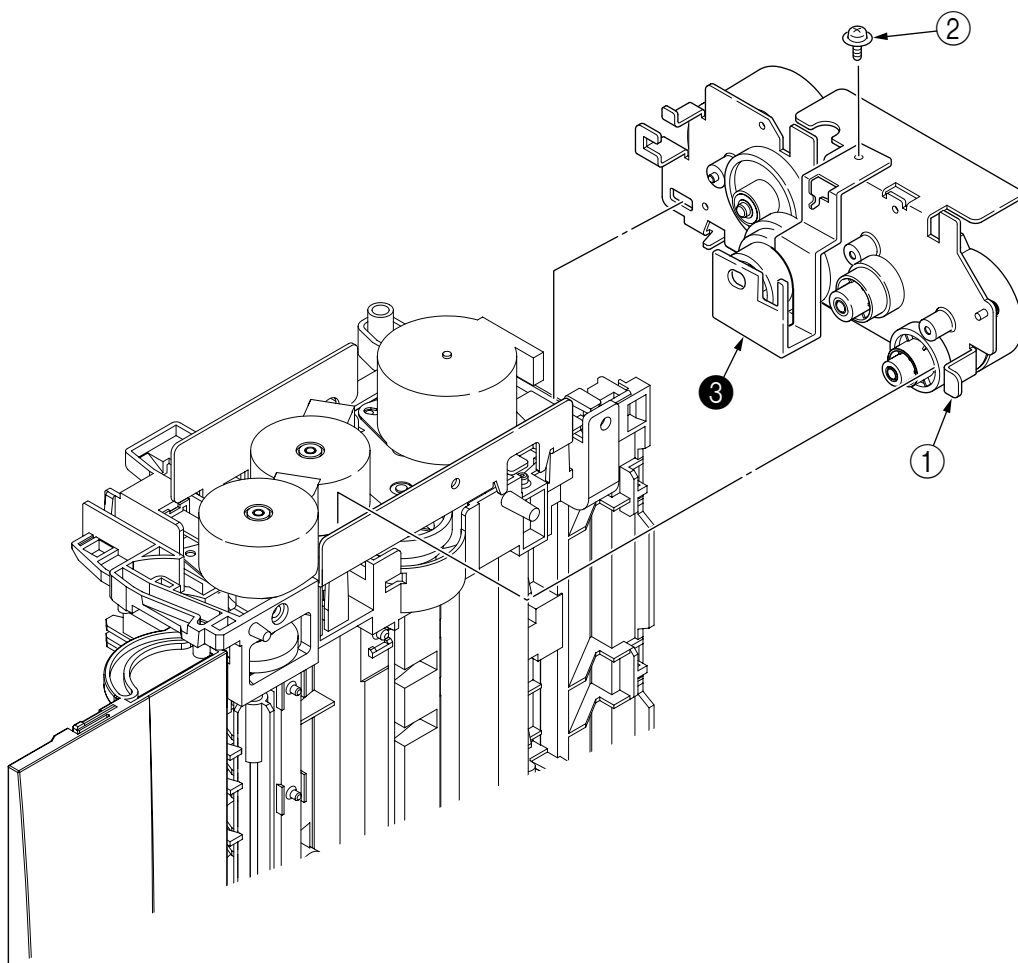
2.3.9 Eject Roller Assy

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the stacker cover assy (see 2.3.12).
- (5) Disengage the eject roller assy ❶ from the lower base ❷ by pressing the latch section of the eject roller assy ❶ in the direction of the arrow shown below, and remove the eject roller assy ❶.



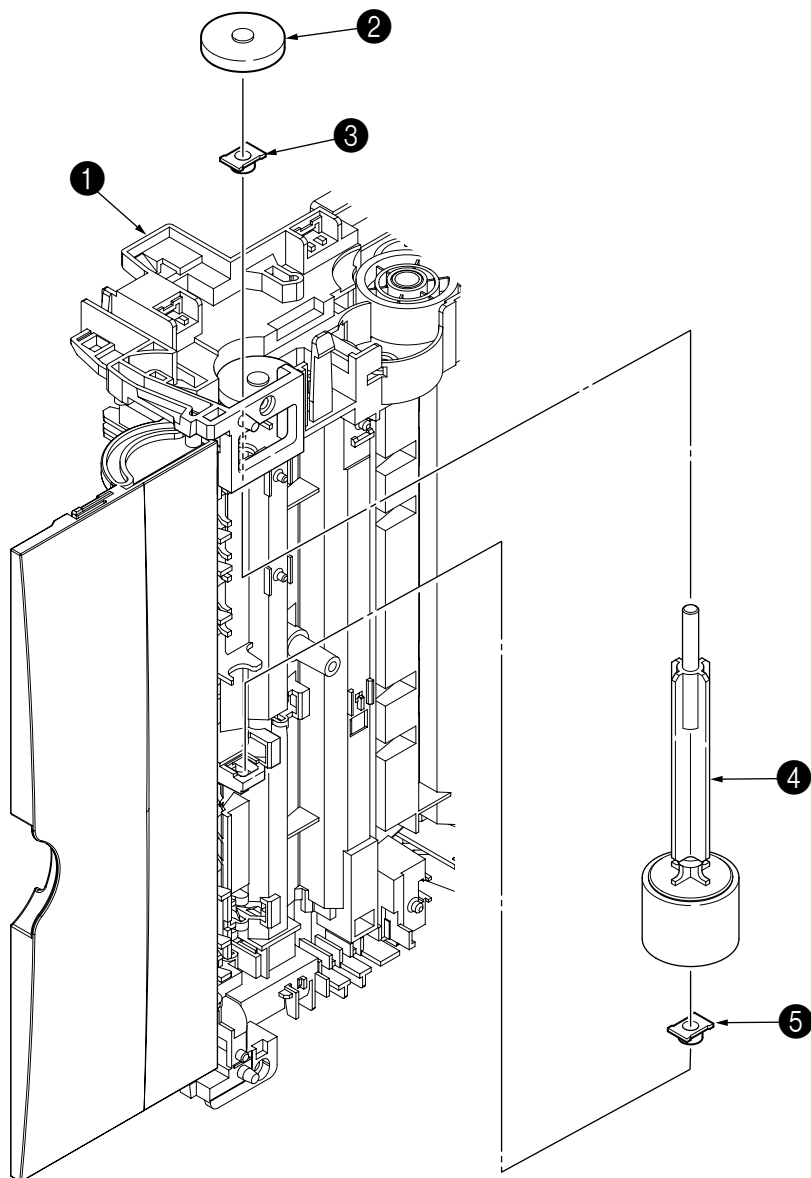
2.3.10 Motor Assy

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Stand the lower base unit on its side as shown, and unlock two latches, then remove the motor assy ①.
- (6) Remove screw ② and remove the bracket-Motor-Sub ③ from the Motor bracket.



2.3.11 Hopping Roller Shaft Assy

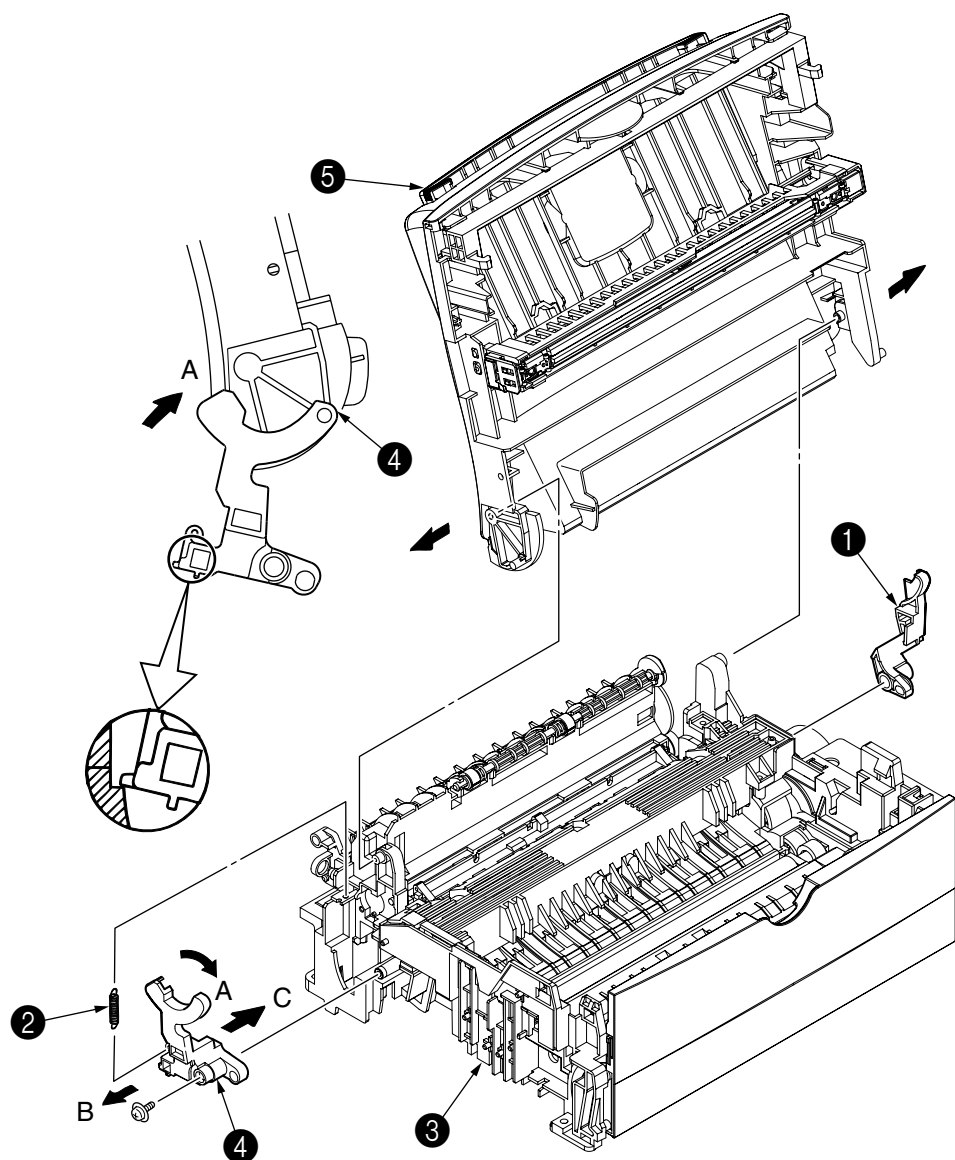
- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove the motor assy (see 2.3.10).
- (6) With the lower base unit ❶ standing on its side, remove the one-way clutch gear ❷ and the bearing (A) ❸.
- (7) Remove the hopping roller shaft assy ❹ (the bearing (B) ❺ comes off, so be careful not to lose it).



2.3.12 Stacker Cover Assy

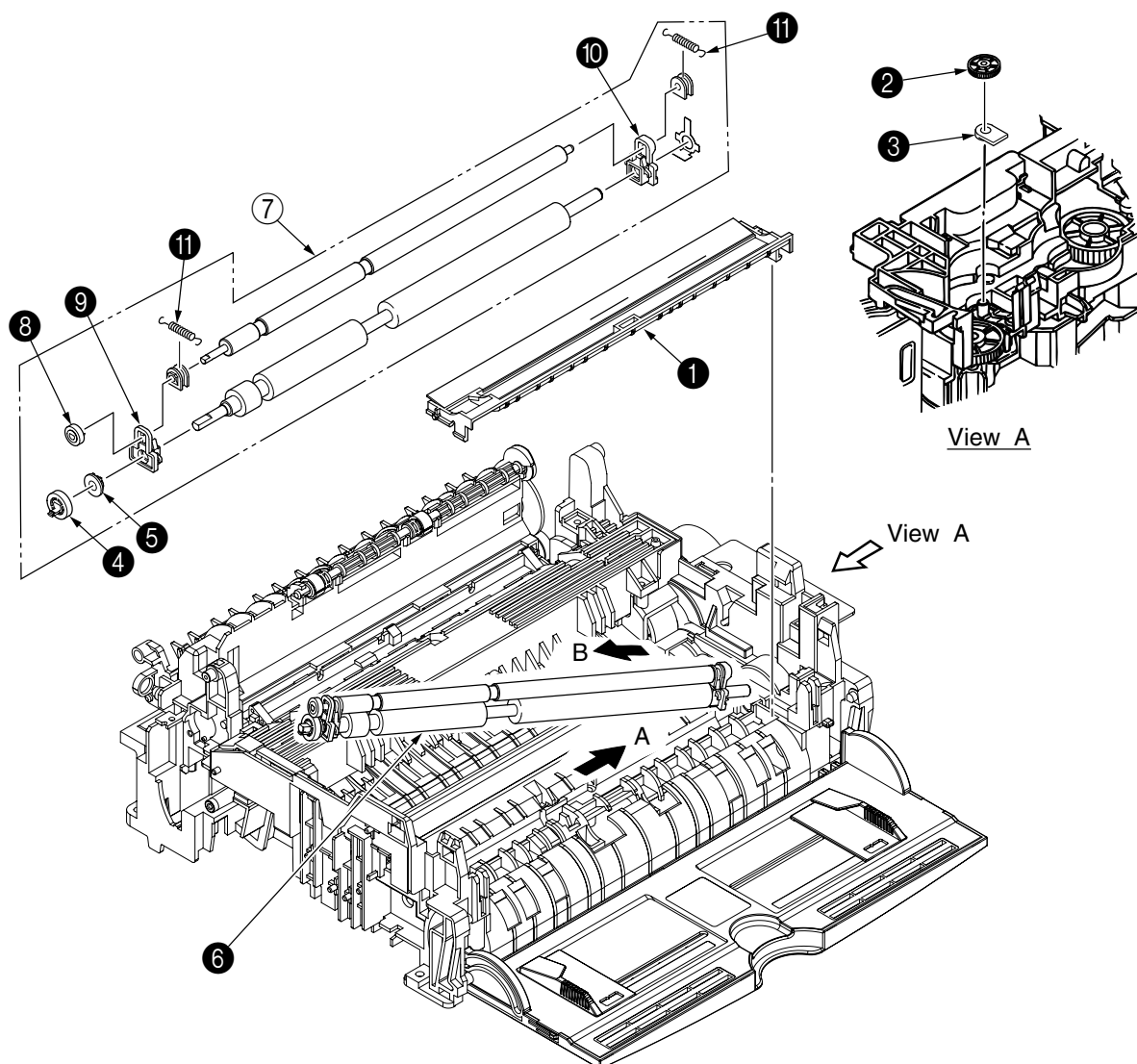
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the motor assy (see 2.3.10).
- (5) Remove the reset lever R ❶.
- (6) Remove one screw, detach the reset spring ❷ from the lower base unit ❸, turn the reset lever L ❹ in the direction of arrow A until it stops, and remove it in the direction of arrow B.
- (7) Unlock two latches of the lower base unit ❸, then remove the stacker cover assy ❺.

Note : When reinstalling the reset lever L ❹, fit it onto the guide of the lower base unit ❸, turn it in the direction of arrow C while pressing down the shaft of back up roller, and engage the reset lever L ❹.



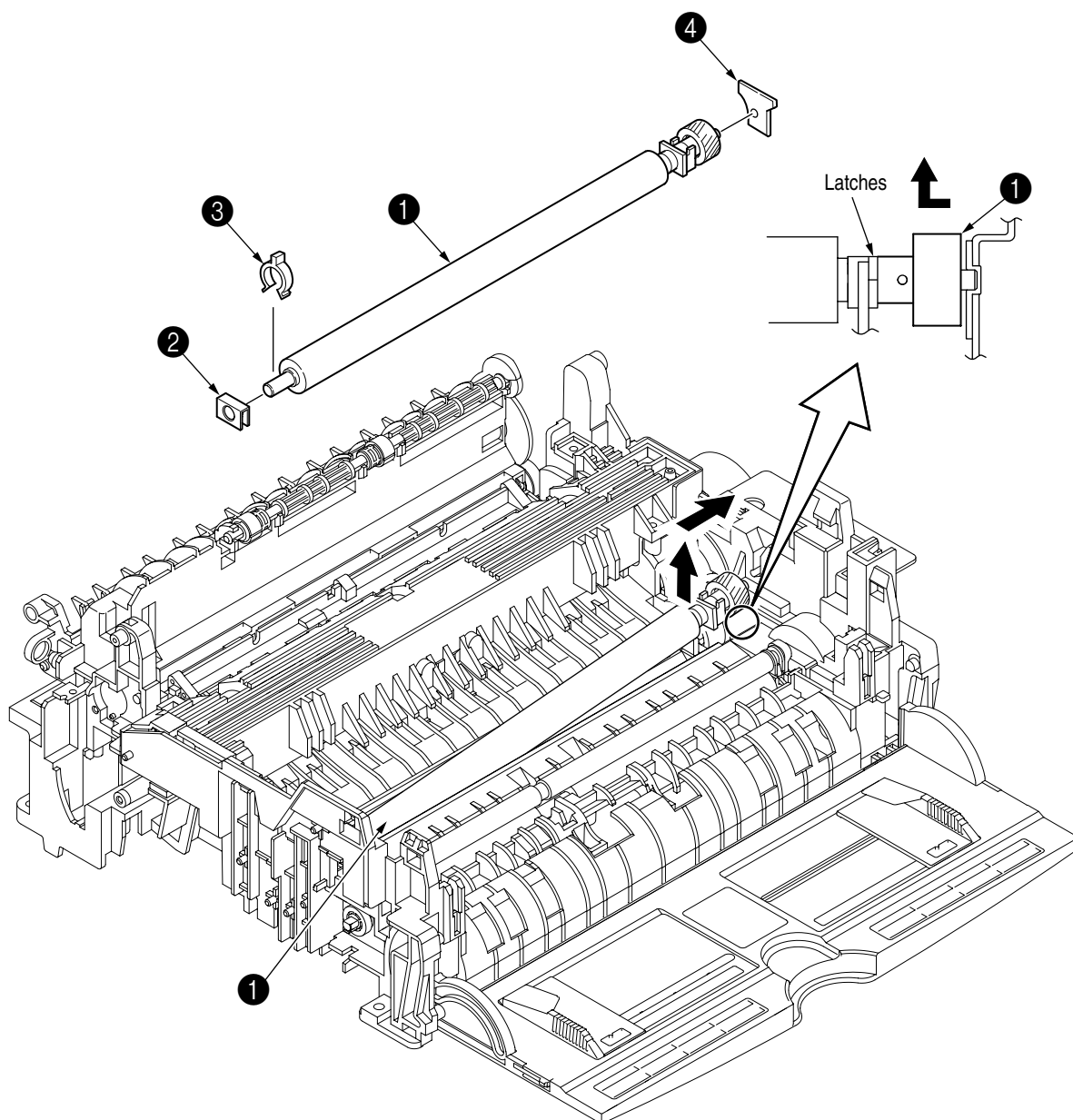
2.3.13 Registration Roller

- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove the motor assy (see 2.3.10).
- (6) Unlock the latch at the left side of the paper guide (R) ① and remove the paper guide (R) ①.
- (7) With the lower base unit standing on its side, remove the one-way clutch gear ② and the bearing ③.
- (8) Remove the Registration Gear by unlocking the latch of the Gear ④.
- (9) Remove the Registration Bearing L ⑤.
- (10) Press the registration roller ⑥ in the direction of arrow A and lift up the left side of it, then remove the registration roller Assy ⑦.
- (11) Pull out the registration roller Assy ⑦ in the direction of arrow B.
- (12) Remove the pressure roller Assy gear ⑧ by unlocking the latch of the gear ⑧.
- (13) Remove the bearing-Registration L ⑨ and bearing Registration R ⑩.
- (14) Remove the Spring ⑪ from the bearing ⑨, ⑩.



2.3.14 Roller Transfer Assy

- (1) With the power switch turned off, unplug the AC cord from the outlet.
- (2) Open the stacker cover.
- (3) Remove the spacer ❶.
- (4) Release the roller transfer assy ❷ by unlocking two latches of the bearing TR (never apply excessive force when unlocking the latch) and slide the roller transfer assy left to remove the gear from the bracket.
- (5) Lift the right side of the roller transfer assy ❷, and shift it to the right side, then pull it out from the main unit (at this time, the bearings ❸ of the left side and holder-TR ❹ of the right side of the roller transfer assy ❷ will also come off).

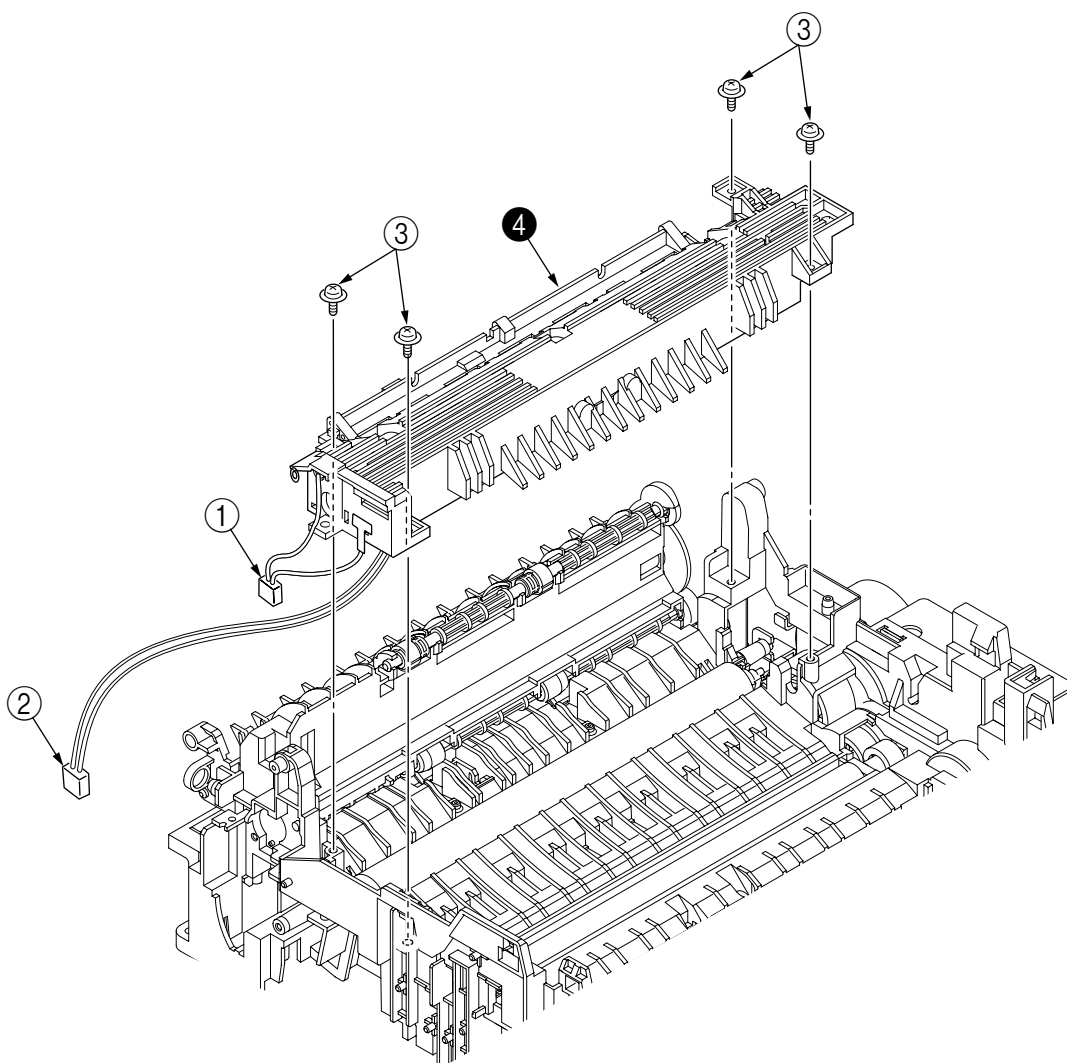


2.3.15 Fusing Unit

- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove the stacker cover assy (see 2.3.12).
- (6) Remove the connecting cable ① of the heater and connecting cable ② of the thermistor from the hooks of the lower base.
- (7) Remove four screws ③, lift and remove the fusing unit ④.

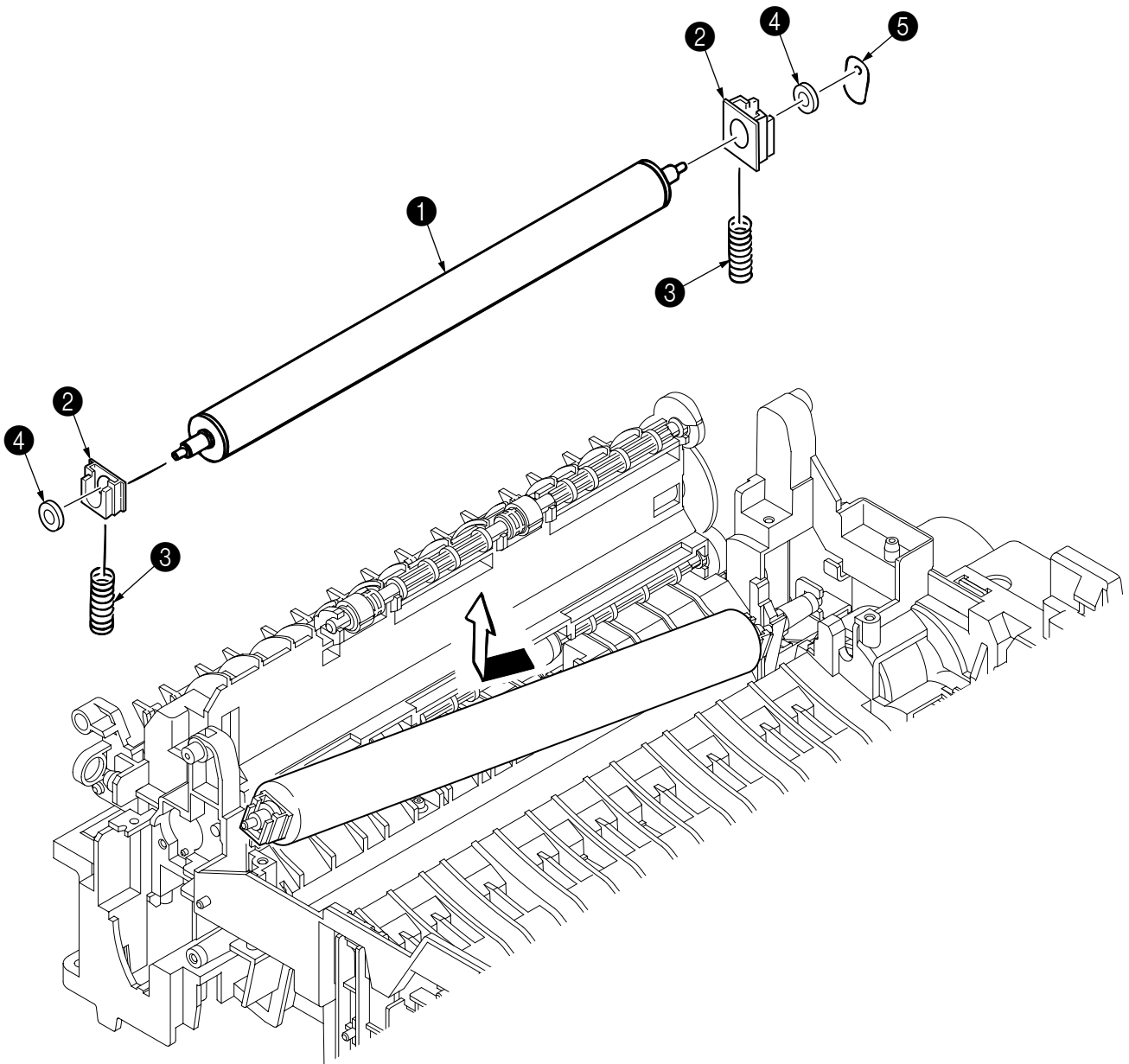
Caution: Fusing unit may be hot. Use care when handling.

- Notes :**
1. When reinstalling or removing the fusing unit, tighten or loosen the screws while holding the fusing unit assy ④ down with your hand (it is being pushed up by back up roller).
 2. When reinstalling the screws ③, be sure to direct the screws into preexisting thread and avoid damaging the threads.
 3. Do not apply excessive torque when tightening the screws ③.



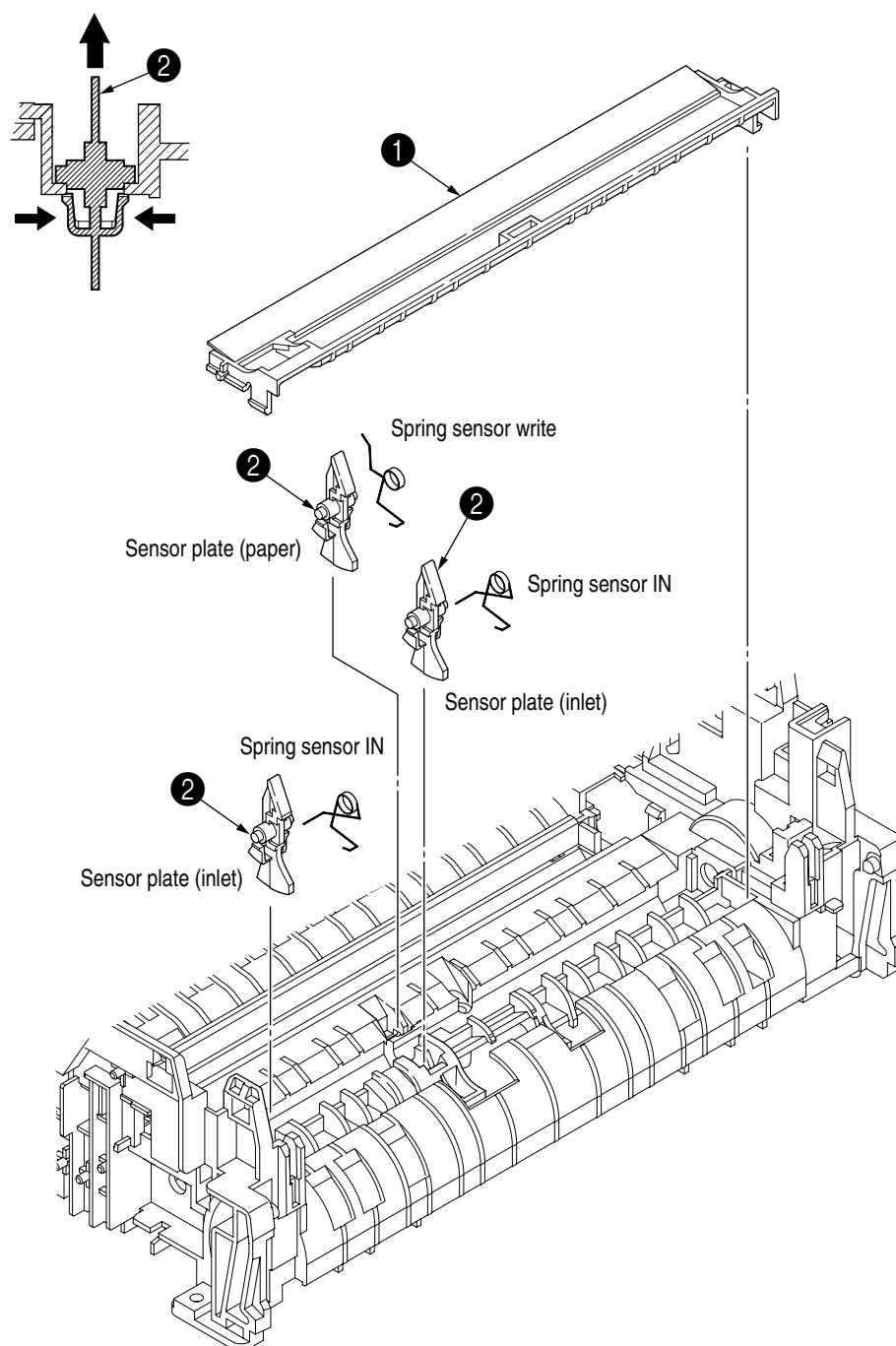
2.3.16 Back-up Roller

- (1) Remove the fusing unit assy (see 2.3.15).
- (2) Lift the left side of the back-up roller ❶, and pull it out to the left side (at this time, two bearing Holders (back-up) ❷ and the bias springs (back-up) ❸ and the two ball-bearings ❹, washer C ❺ will also come off).



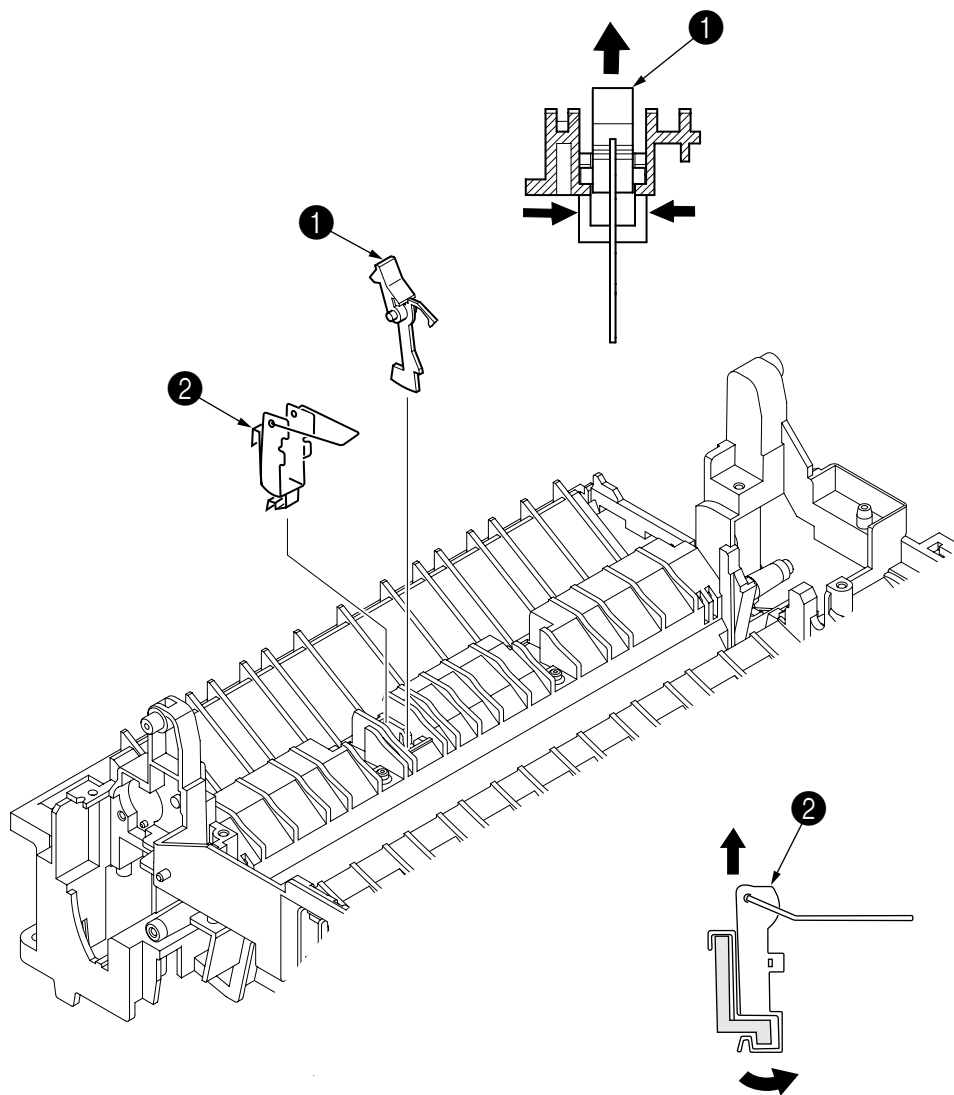
2.3.17 Sensor Plate (Inlet)

- (1) Remove the upper cover (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Unlock the latch at the left side of the paper guide (R) ❶ and remove the paper guide (R) ❶.
- (6) Press the clamps of three sensor plates (inlet and paper) ❷, and remove them by pressing them upward from the bottom. When removing the sensor plates, take care not to lose the springs.



2.3.18 Sensor Plate (Outlet), Sensor Wire Assy

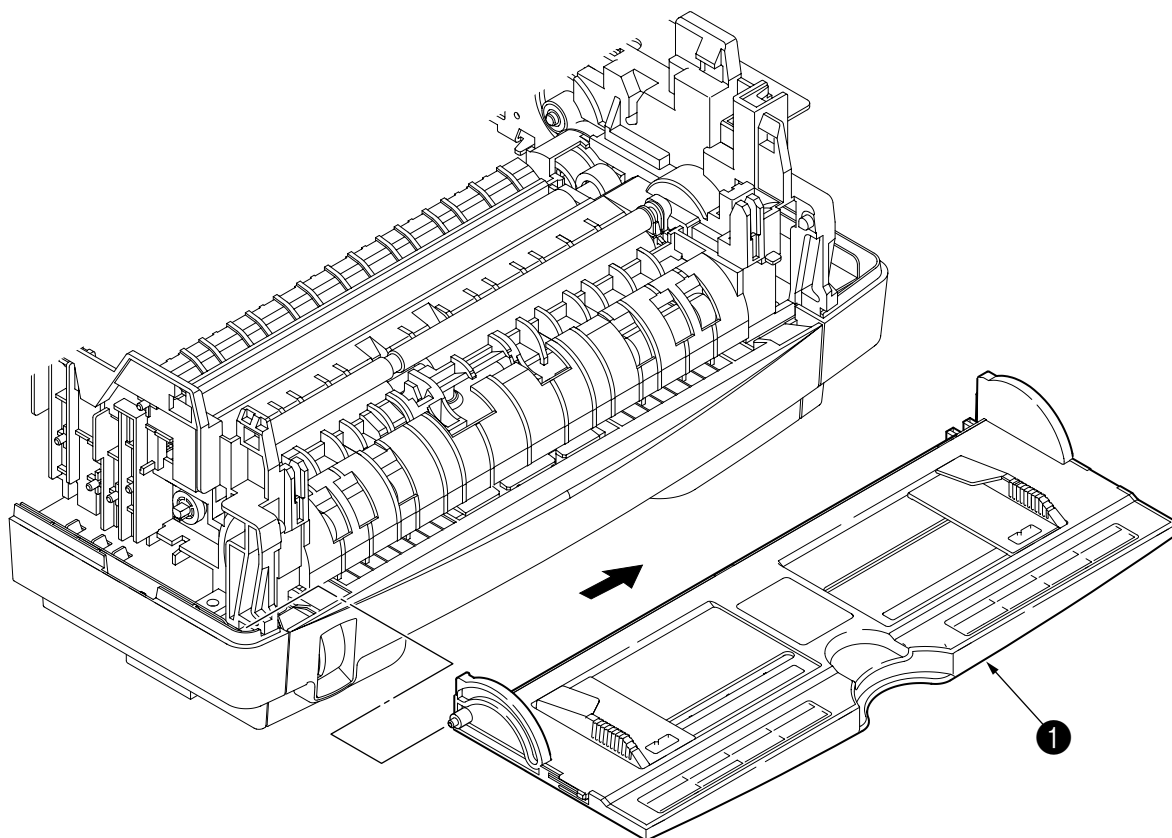
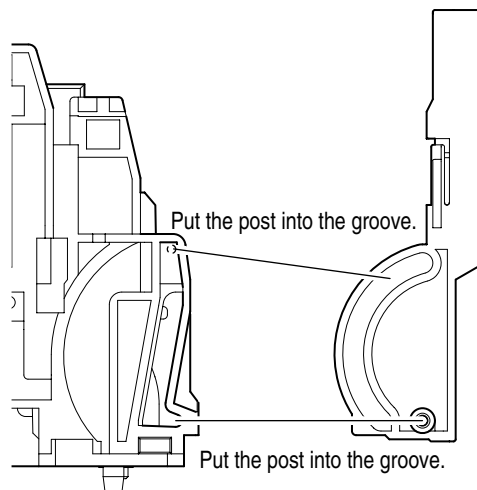
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the eject roller assy (see 2.3.9).
- (4) Remove the face up stacker assy (see 2.3.8).
- (5) Remove the lower base unit (see 2.3.4).
- (6) Remove the fusing unit assy (see 2.3.15).
- (7) Press the clamps of the sensor plate (outlet) ①, and remove the sensor plate by pushing it up.
- (8) Turn the clamps of the sensor wire assy ② remove the sensor wire assy from the lower base unit.



2.3.19 Manual Feed Guide Assy

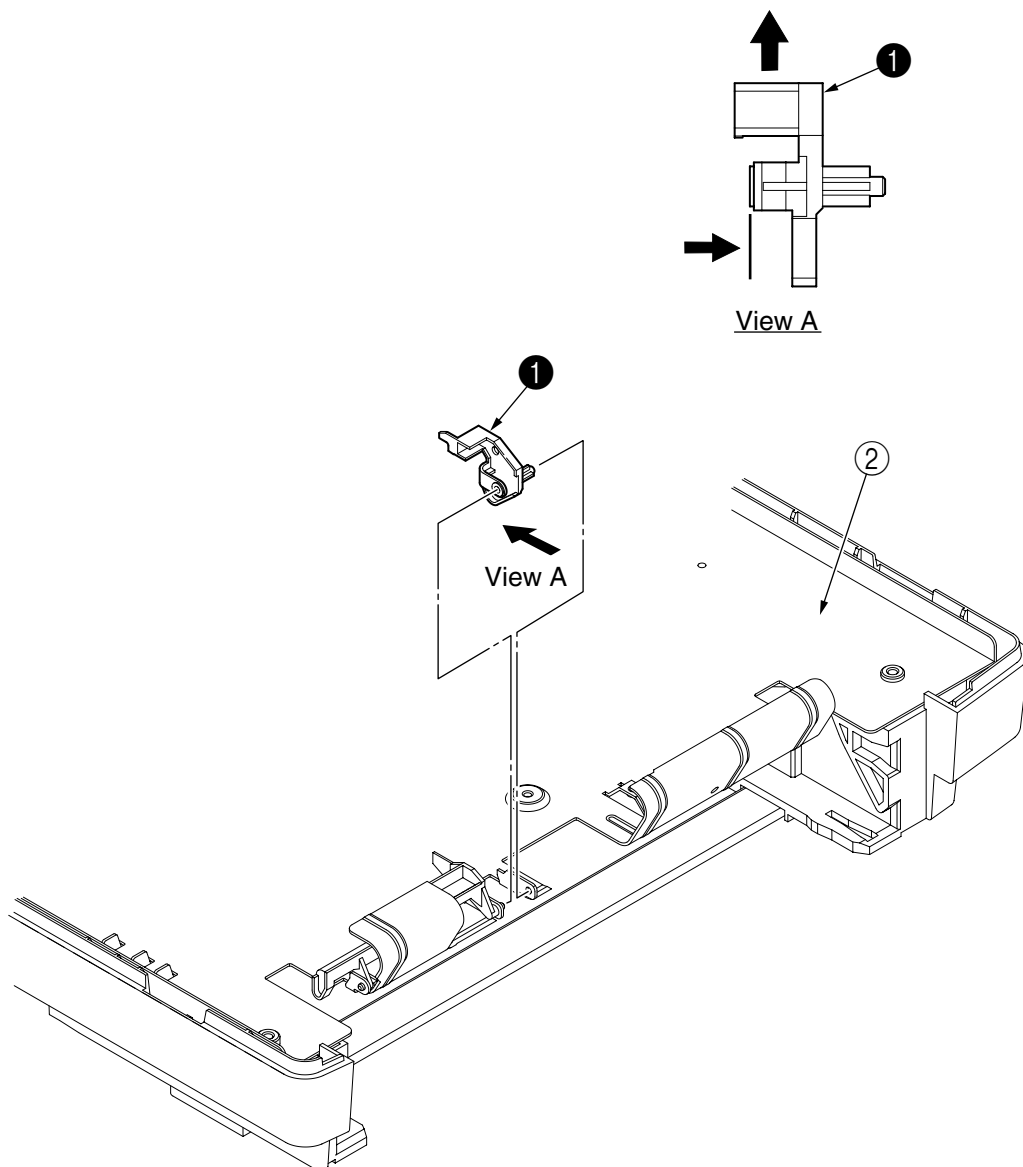
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Open the manual feed guide assy ❶, and release the engagement on both sides with the main unit by carefully bending the manual feed guide assy ❶.

Note : When remounting, verify the proper the engagements as shown in the diagram.



2.3.20 Sensor Plate (Paper Supply)

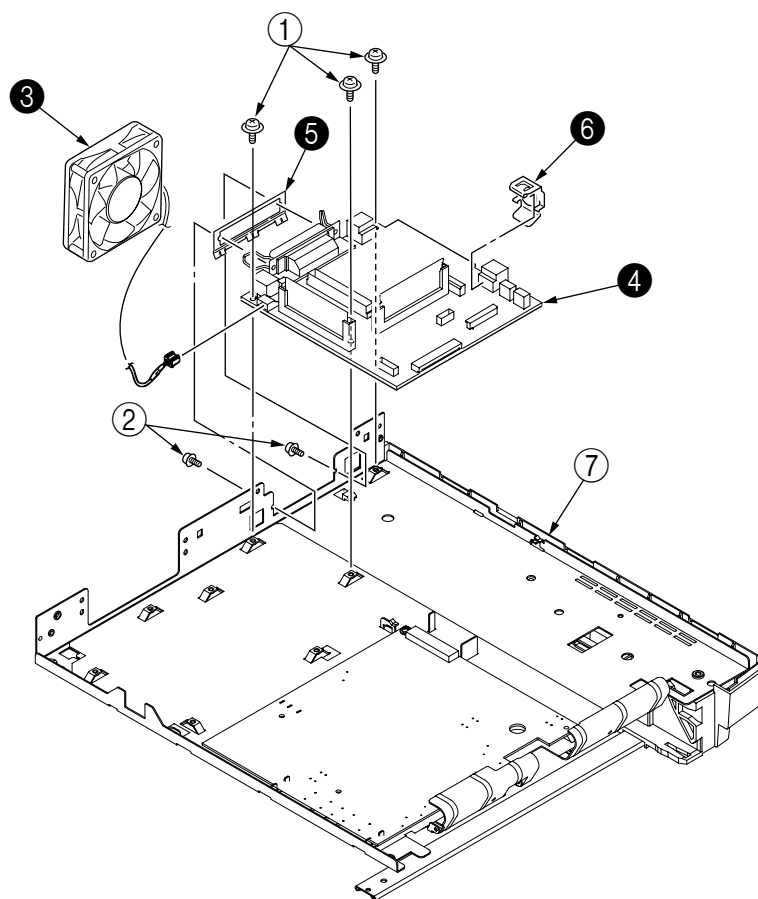
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Press the clamps of the sensor plate (paper supply) ❶ to unlock the latch, and remove it from the base plate ❷.



2.3.21 GRV-2 PCB/GRR-2 PCB

- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the operator panel assy (see 2.3.3).
- (3) Remove the face up stacker assy (see 2.3.8).
- (4) Remove the lower base unit (see 2.3.4).
- (5) Remove three screws ① and two screws ②.
- (6) Remove the connector FAN, and disconnect the fan motor ③.
- (7) Remove the three connectors PW_1, PW_2 and HVIF.
- (8) Remove the GRV-2 PCB or GRR-2 PCB ④ and plate earth A ⑤ and plate earth (Env) ⑥ .

Note : When reinstalling the GRV-2 PCB or GRR-2 PCB ④ onto the base plate ⑦, insert the edge of the GRV-2 PCB or GRR-2 PCB ④ in two slots of the base plate ⑦.



An attention matter in (GRV-2 PCB or GRR-2 PCB) exchange.

- 1.The spare part of Main Control Board is different in part No. by version of F/W.
In PCB exchange, please change it for higher or equal version F/W than a former PCB.

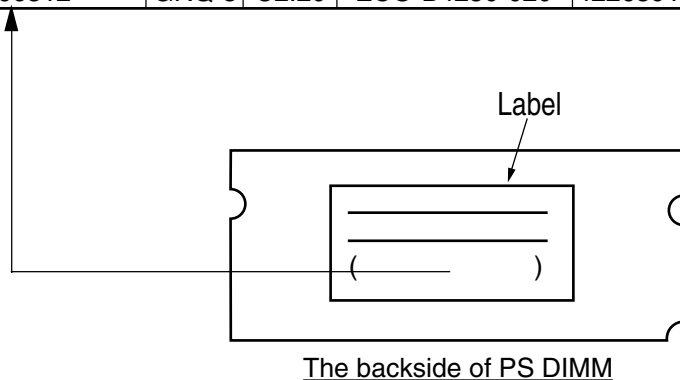
B4350

Spare part No. of Main Control Board	Board Name	CU Version	ECO No.
42661305	GRV-2	A1.10	-
42661310	GRV-2	A1.14	ECO-B4250-002
43006705	GRR-2	A2.10	ECO-B4250-007
43006708	GRR-2	A2.12	ECO-B4250-010
43006710	GRR-2	A2.13	ECO-B4250-013
43006716	GRR-2	A2.21	ECO-B4250-019

- 2.There are two types of GRV-2 and GRR-2 in Main Control Board.
As for GRV-2 and GRR-2, there is not compatibility of PS DIMM.
When you exchange GRV-2 which include PS DIMM for GRR-2, please check PS DIMM.
If the PS DIMM is 42566306(GRQ-4), please exchange PS DIMM together.

B4350 PS DIMM

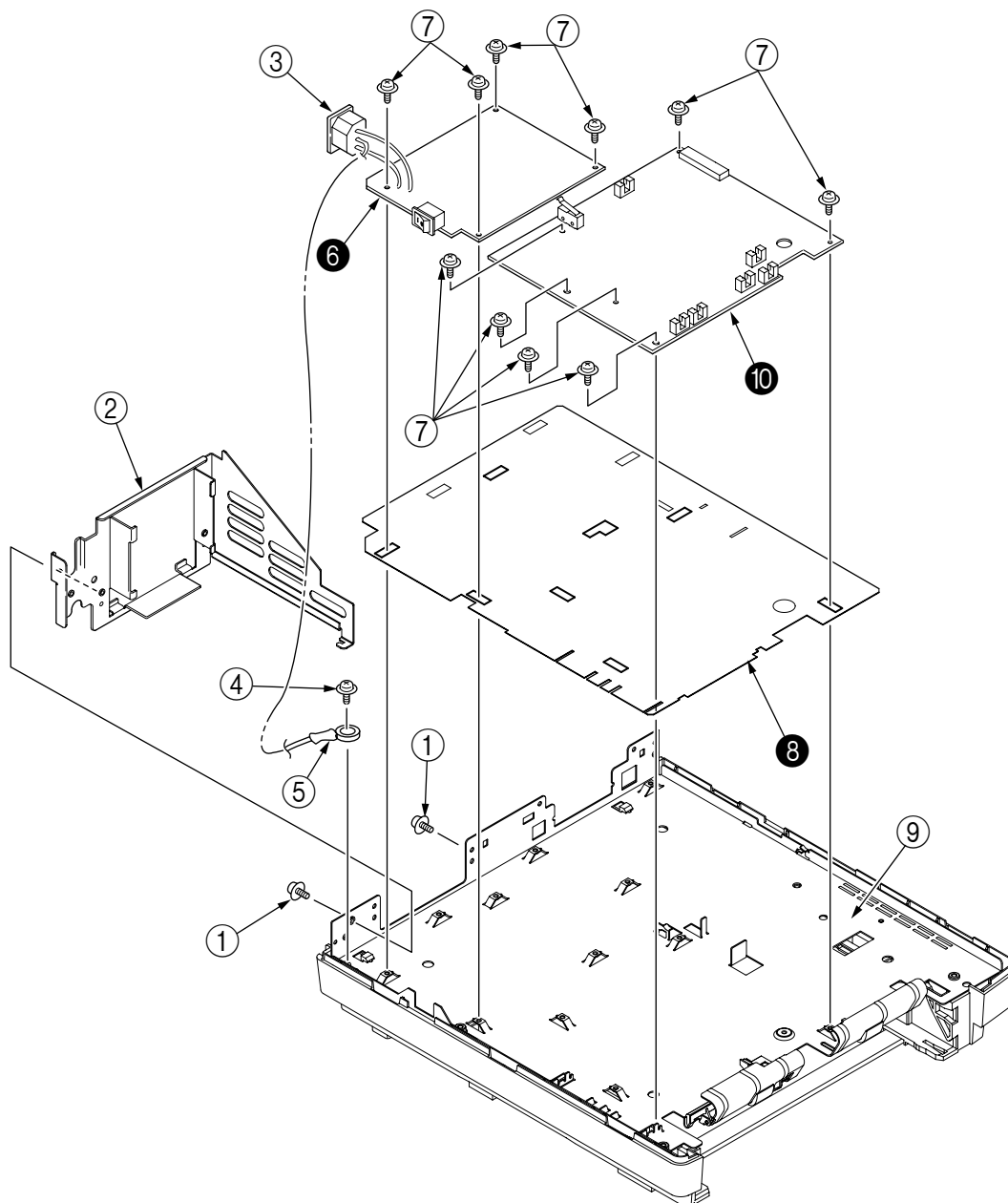
Spare part No. of PS DIMM	Board Name	CU Version	ECO No.	Production No. of PS DIMM			Capability for Use	
				ODA	OEL	AOS	GRV-2	GRR-2
42566306	GRQ-4	C1.14	-	42263908	42263908	42263908	O	X
42566308	GRQ-5	C2.09	ECO-B4250-008	42263911	42263912	42263913	O	O
42566310	GRQ-5	C2.13	ECO-B4250-012	42263911	42263912	42263913	O	O
42566312	GRQ-5	C2.20	ECO-B4250-020	42263911	42263912	42263913	O	O



2.3.22 Power Supply Board and High Voltage/Sensor Board

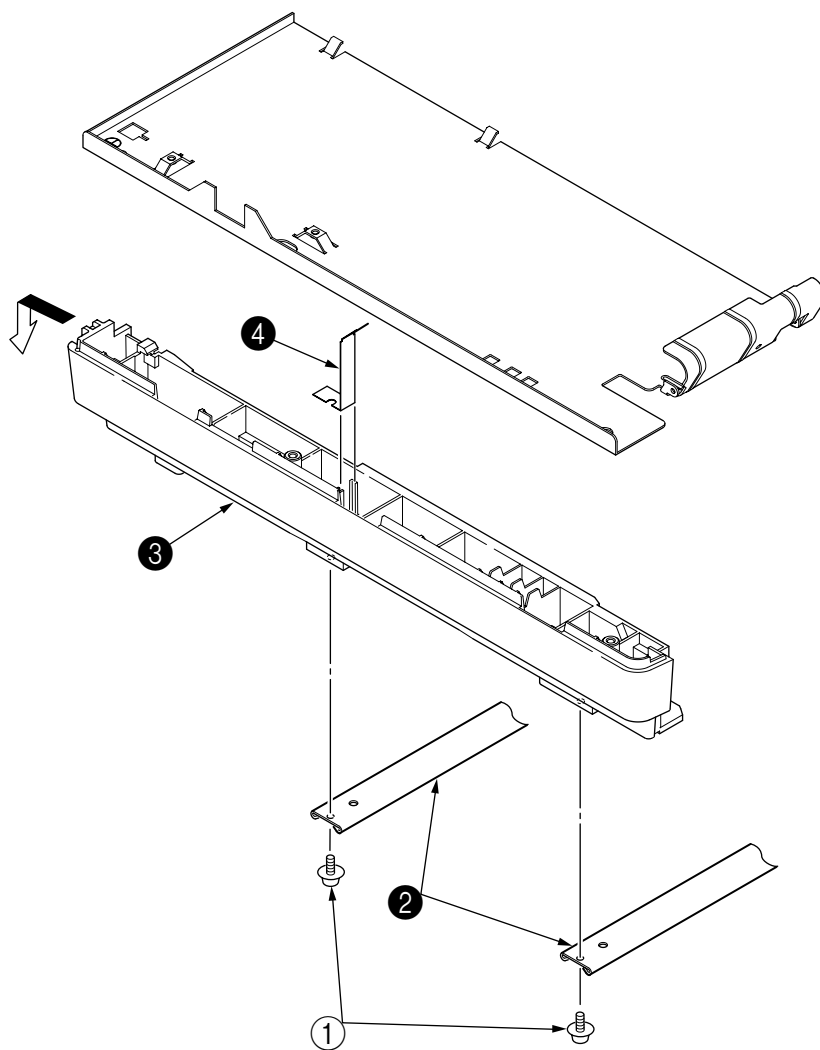
- (1) Remove the upper cover assy (see 2.3.1).
- (2) Remove the lower base unit (see 2.3.4).
- (3) Remove two screws ① and the guide plate ②.
- (4) Remove the AC inlet ③ from the guide plate ②.
- (5) Remove the screw ④ and remove the grounding (earth) wire ⑤.
- (6) Remove the connectors CN2 from power supply board ⑥ and CN1 from high voltage/sensor board ⑩.
- (7) Remove ten screws ⑦, and remove the power supply board ⑥ and high voltage/sensor board ⑩.
- (8) Remove the Insulation plate ⑧ from the base plate ⑨.

- Notes :**
1. Be careful about the sensor (paper supply) when reinstalling the lower base.
 2. Make sure that no excessive force is applied to the power supply switch.
 3. When installing the power supply board onto the base plate, be careful not to bend the base plate (it is desirable to place a block underneath it to prevent bending).



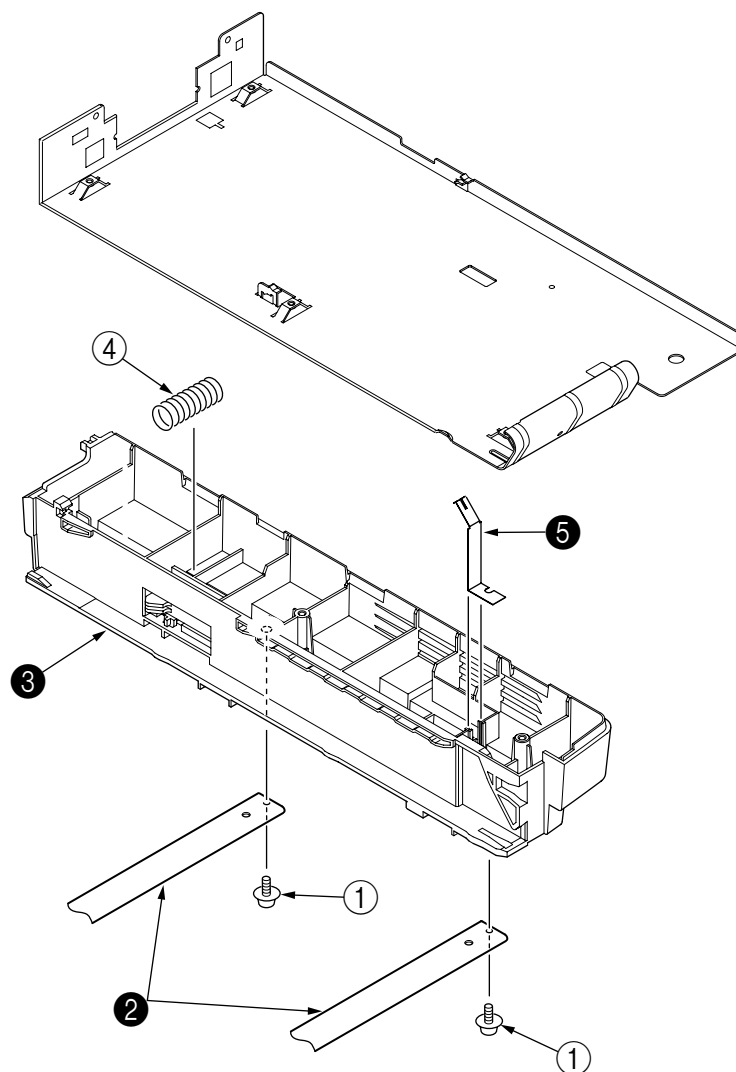
2.3.23 Cassette Guide L Assy

- (1) Remove the paper cassette.
- (2) Remove the upper cover assy (see 2.3.1).
- (3) Remove the lower base unit (see 2.3.4).
- (4) Remove two screws ①, and remove the beam plates ②.
- (5) Remove the cassette guide L Assy ③ by shifting it in the direction of the arrow as shown below.
- (6) Remove the earth plate ④.



2.3.24 Cassette Guide R Assy

- (1) Remove the paper cassette.
- (2) Remove the upper cover assy (see 2.3.1).
- (3) Remove the lower base unit (see 2.3.4).
- (4) Remove two screws ①, and remove the beam plates ②.
- (5) Remove the cassette guide R Assy ③ by shifting it in the direction of arrow.
- (6) Remove the earth plate ④ and the cassette lock spring ⑤.



3. ADJUSTMENT

This chapter provides explanations concerning the adjustment necessary when replacing a part. The adjustment is made by changing the parameter value set in EEPROM on the main control board. The parameter can be set by the key operation from the operator panel. This printer has three kinds of maintenance modes, and it is necessary to select one of the modes when replacing any parts.

3.1 Maintenance Modes and Functions

3.1.1 User Maintenance Mode (Administrator Menu)

In order to enter Admin MENU, turn the printer on while holding down the ITEM+/ITEM- switch.

Function

There are seventeen functions as follows:

Category	Item	Value	Functions
OP MENU	ALL	ENABLE DISABLE	Sets All Category Enable/Disable of User Menu. Set to Disable, User Menu is not shown. Subsequent Items are not displayed if the Categories are disabled. Panel Lock is available when this MENU is set to DISABLE.
	INFO.	ENABLE DISABLE	Sets Category INFORMATION MENU Enable/Disable. Set to Disable, Category INFORMATION MENU of User Menu is not displayed.
	PRINT	ENABLE DISABLE	Sets Category PRINT MENU Enable/Disable. Set to Disable, Category PRINT MENU of User Menu is not displayed.
	MEDIA	ENABLE DISABLE	Sets Category MEDIA MENU Enable/Disable. Set to Disable, Category MEDIA MENU of User Menu is not displayed.
	SYS CONF	ENABLE DISABLE	Sets Category SYSTEM CONFIG MENU Enable/Disable. Set to Disable, Category SYSTEM CONFIG MENU of User Menu is not displayed.
	PCL MENU	ENABLE DISABLE	Sets Category PCL EMULATION MENU Enable/Disable. Set to Disable, PCL EMULATION MENU of User Menu is not displayed.
	PPR MENU	ENABLE DISABLE	Sets Category PPR EMULATION MENU Enable/Disable. Set to Disable, PPR EMULATION MENU of User Menu is not displayed.
	FX MENU	ENABLE DISABLE	Sets Category FX EMULATION MENU Enable/Disable. Set to Disable, FX EMULATION MENU of User Menu is not displayed.
	ESC/P	ENABLE DISABLE	Sets Category ESC/P EMULATION MENU Enable/Disable. Set to Disable, ESC/P EMULATION MENU of User Menu is not displayed. (Displayed only for Domestic market)
	PARALLEL	ENABLE DISABLE	Sets Category PARALLEL MENU Enable/Disable. Set to Disable, Category PARALLEL MENU of User Menu is not displayed.
	RS232C	ENABLE DISABLE	Sets Category RS232C MENU Enable/Disable. Set to Disable, Category RS232C MENU of User Menu is not displayed. Displayed only if RS232C is intalled.
	USB	ENABLE DISABLE	Sets Category USB MENU Enable/Disable. Set to Disable, Category USB MENU of User Menu is not displayed.
	NETWORK	ENABLE DISABLE	Sets Category NETWORK MENU Enable/Disable. Set to Disable, Category NETWORK MENU of User Menu is not displayed. Displayed only if a NIC is installed.

Category	Item	Value	Functions
OP MENU	MEMORY	ENABLE DISABLE	Sets Category MEMORY MENU Enable/Disable. Set to Disable, Category MEMORY MENU of User Menu is not displayed.
	ADJUST	ENABLE DISABLE	Sets Category SYSTEM ADJUST MENU Enable/Disable. Set to Disable, Category SYSTEM ADJUST MENU of User Menu is not displayed.
	MAINTE	ENABLE DISABLE	Sets Category MAINTENANCE MENU Enable/Disable. Set to Disable, Category MAINTENANCE MENU of User Menu is not displayed.
	USAGE	ENABLE DISABLE	Sets Category USAGE MENU Enable/Disable. Set to Disable, Category USAGE MENU of User Menu is not displayed.

Detailed descriptions of these functions are provided in Appendix E, **DIAGNOSTICS TEST**.

3.1.2 System Maintenance Mode (System Maintenance Menu)

Note: This mode is used only by maintenance personnel and it should not be released to the end-users.

The printer enters System Maintenance Menu when the power supply switch is turned ON while the Menu/Item+/Value-/Cancel switches are held down.

Function

There are functions as follows:

Category	Item	Value	Functions
OKIUSER	OKIUSER	ODA OEL APS JP1 JPOEM1 JPOEM2 OEMA OEML	Sets brands; JPOEM1:Japanese OEM(1) JPOEM2:Japanese OEM(2) OEMA:Overseas OEM for A4 default OEML:Overseas OEM for Letter default Selecting brand will automatically prompt reboot.
MAINTE MENU	FL FOR- MAT	EXECUTE	Initializes Flash ROM forcedly. Every Flash ROM installed is subject to initialization.
	EEPROM	RESET	Initializes EEPROM. Special items, such as MAC Address, are not initialized.
CONFIG MENU	CODESET	TYPE1 TYPE2	Sets Russian/Greek and view/not view. TYPE1: Not view Russian/Greek. TYPE2: View Russian/Greek. Use a panel that supports Russian/Greek to view Russian/Greek.
ENG STAT	ENG STAT	PRINT	Selecting by the Select switch, then pressing the On-line switch will prompt initialization and printing Engine information.
PAGE PRT	PAGE PRT	ENABLE DISABLE	Sets printing or not printing the total page count in PRINT MENU MAP.

Category	Item	Value	Functions
EMULATE	PCL	ENABLE DISABLE	<p>Changes the default PDL for each brand. PDLs that are disabled in this menu will not be displayed at EMULATE of User Menu or OP MENU of Admin Menu. (No specific to PCL XL is provided; thus, when DISABLE is set, there is not visual change.)</p> <p>When print data in the PDL language set to DISABLE is received, the printer will display INVALID DATA and discard received data.</p> <p>PS3 EMU will be displayed only when PSE is installed.</p> <p>For PN272/83, PCL cannot be set to DISABLE. (ENABLE must be set to make it always usable. Even if set to DISABLE, received data will be processed.)</p>
	IBM PPR	ENABLE DISABLE	
	EPSONFX	ENABLE DISABLE	
	PS3 EMU	ENABLE DISABLE	
	ESC/P	ENABLE DISABLE	
	PCL XL	ENABLE DISABLE	
LOOPTEST	RS232C	EXECUTE	<p>Displayed only if an RS232C is installed.</p> <p>Loop Test runs Serial I/F function test without connecting the host PC. The printer alone sends/receives "00"FFH" data.</p> <p>Loop Test requires attachment of a Loop connector (pin2: TD and pin3: RD are shorted) prior to execution.</p> <p>A Loop count is displayed real-time on LCD, and if an error occurs, an error message will be displayed.</p> <p>This mode can be ended only by turning the power off. Following this operation, the power is shut down; thus, the printer cannot go back in Operation Mode or other Maintenance Mode.</p>
COMT PRT	CONT PRT	EXECUTE	<p>PRINTING Rolling ASCII Continuous Print Continuously prints Rolling ASCII patterns for various types continuous testing on the maker side. (Noise test, engine test).</p> <p>This mode can be ended by pressing the "ONLINE" SW. Following this operation, the power turns off, thus, the printer cannot return to either operation mode or any of other maintenance modes.</p>
DOTSHIFT	TRAY1	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from Tray 1. This area will not be initialized by the EEPROM reset operation.
	TRAY2	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from Tray 2. This item is displayed even when Tray 2 is not set. This area will not be initialized by the EEPROM reset operation. (At first, it is initialized by default.)
	MPF	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from MPF. This item is displayed even when MPF is not set. This area will not be initialized by the EEPROM reset operation. (At first, it is initialized by default.)
	MANUAL	-4.0mm ~ -0.5mm 0mm +0.5mm ~ +3.5mm	Set the dot shift for the horizontal direction when printing from the manual slot. This area will not be initialized by the EEPROM reset operation. (At first, it is initialized by default.)
NETWORK			Details depend on NETWORK.
ENG DIAG			Enters Engine Maintenance Menu.

Detailed descriptions of these functions are provided in Appendix E, **DIAGNOSTICS TEST**.

3.1.3 EEPROM Initial Setting Range for Events

As for initialization of EEPROM, ranges differ the whole phenomenon.
"O" is initialized. "-" is not initialized.

Table 3-1 The Initial-Setting domain of EEPROM

No	Events	CU EEPROM Area					PU EEPROM Area			
		Factory Default Area	User Menu Area	Administrator Menu / System Maintenance Menu Area(*3)	Brands Area	F/W Revision Area	Engine Maintenance Menu Area			
							Drum Counter	Page Counter	Toner Dot Counter	
1	User Maintenance Menu EEPROM RESET Operation	—	O	—	—	—	—	—	—	—
2	F/W Revision check error at the time of a power on.	—	O	O	—	O	—	—	—	—
3	CU EEPROM area mapping Revision check error at the time of a power on.	O	O	O	—	—	—	—	—	—
4	Brands area check error at the time of a power on.(*1)	O	O	O	O	O	—	—	—	—
5	Engine Maintenance Menu ENGINE RESET Operation	—	—	—	—	—	—	O	O (*2)	O
6	PU EEPROM area mapping check error at the time of a power on.	—	—	—	—	—	O (*3)	O	O	O

- (*1) The model (forcing) which operated before is for operating as another model (forcing), and a Brands check is recognized as an error and resets change of the Brands point by the PjL command, operation at the time of the power supply injection by new EEPROM, etc.
- (*2) It restricts to the time when whose page counter is 500 or less sheets, and is reset by 0. (ENGINE RESET by the PjL command is not this limitation.)
- (*3) Although a DOT SHIFT setting menu exists in a system maintenance menu, since setting value preservation area is arranged at PU EEPROM AREA, even when the system maintenance menu item is initialized, a DOT SHIFT setup is not initialized. On the contrary, when PU EEPROM AREA is initialized, a DOT SHIFT setup is also initialized.

3.2 Adjustment When Replacing a Part

Adjustment is necessary when replacing any of the following parts.

Part Replaced	Adjustment
Image Drum Cartridge	Reset the image drum counter (refer to User's manual).
Main Control Board	EEPROM data Upload / Download

3.2.1 Uploading/Downloading EEPROM data

When the controller printed circuit board is replaced, the contents of the old EEPROM shall be copied to the new EEPROM on the new board to preserve customer settings. For the purpose, use the Maintenance Utility.

A operation method of Maintenance Utility, please refer to Maintenance Utility Operating Specifications.

The maintenance utility is designed to be used only by field engineer and it should not be released to the end-users.

4. PERIODICAL MAINTENANCE

4.1 Periodical Replacement Parts

The parts are to be replaced periodically as specified below:

Part name	Condition for replacement	Cleaning	Remarks
• Toner cartridge 2.5K (Type 9)	About 2,500 sheets of paper have been printed.	• LED head	Consumables
• Toner cartridge 6K (Type 9)	About 6,000 sheets of paper have been printed.	• LED head	Consumables
• Image drum cartridge (Type 9)	About 25,000 sheets of paper have been printed. See 1.4. (14)		Consumables

4.2 Cleaning

Remove any toner or dust accumulated inside the printer. Clean in and around the printer with a piece of cloth when necessary. Use the handy cleaner (service tool) to clean inside the printer.

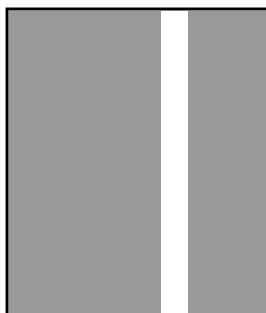
Note: Do not touch the image drum, LED lens array, or LED head connector block.

4.2.1 Cleaning of LED Lens Array

Clean the LED lens array or replace the toner cartridge when white lines or stripes (void, light printing) are generated vertically down the page, as shown below.

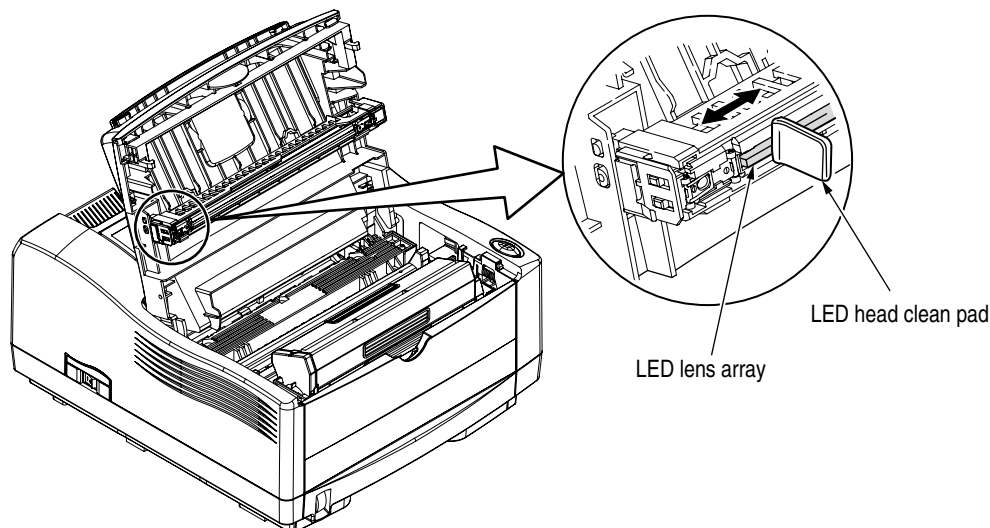
Note: The LED lens array must be cleaned with an LED head cleaner included in the replacement toner kit.

White lines or stripes
(void, light printing)



- (1) Set the LED head cleaner to the LED lens array as shown in the figure, then slide the cleaner back and forth horizontally several times to clean the head.

Note: Gently press the LED head cleaner onto the LED lens array.



- (2) Throw the cleaner pad away.

4.2.2 Cleaning Page Function

There is a charge roller cleaning function with this printer, which can be executed by the user.

- (1) ① Press the MENU key several times, and the LCD displays "MAINTENANCE MENU".
② Press the ITEM key, and the LCD displays "CLEANING PRINT".
③ Press the SELECT key. The printer enters the cleaning mode.
- (2) The LCD displays "MANUAL" on the upper line, and on the lower line, "LETTER REQUEST" is displayed, scrolling one character width at a time from right to left "LETTER" on the lower line may instead be "A4" depending on the printer designation.

When the above messages appear on the LCD, the user can verify that the printer has entered the cleaning mode and that it is requesting insertion of a letter (or A4) size paper into the manual feederslot.

- (3) Insert a sheet of paper into the manual feeder slot.
- (4) Toner attached to the image drum is transferred onto the inserted sheet, and the sheet is ejected with the toner residues printed. While this process is going on, the LCD displays "PRINT CLEANING" message.
- (5) The printer returns to "MAINTENANCE MENU".
The LCD displays "CLEANING PRINT".

5. TROUBLESHOOTING PROCEDURES

5.1 Troubleshooting Tips

- (1) Check the troubleshooting section in the Printer Handbook.
- (2) Gather as much information about the situation as possible.
- (3) Inspect the equipment under the conditions close to those in which the problem had occurred.

5.2 Points to Check before Correcting Image Problems

- (1) Is the printer being run in proper ambient conditions?
- (2) Are supplies (toner) and routine replacement part (image drum cartridge) being replaced properly?
- (3) Is the printing paper normal (acceptable quality)?
- (4) Is the image drum cartridge being loaded properly?

5.3 Tips for Correcting Image Problems

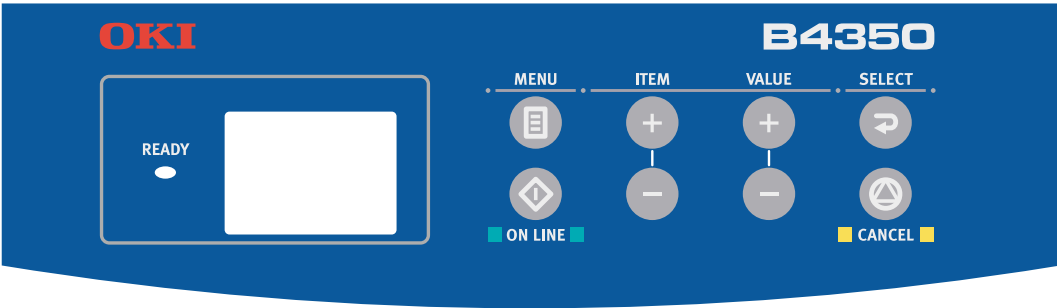
- (1) Do not touch, or bring foreign matter into contact with the surface of the image drum.
- (2) Do not expose the image drum to direct sunlight.
- (3) Keep hands off the fuser unit as it heats up during operation.
- (4) Do not expose the image drum to light for longer than 5 minutes at room temperature.

5.4 Preparation for Troubleshooting

(1) Operator panel display





The failure status of the printer is displayed by the liquid crystal display (LCD) of the operator panel. Take proper corrective action as directed by messages which are being displayed on the LCD.

For ODA/OEL/AOS



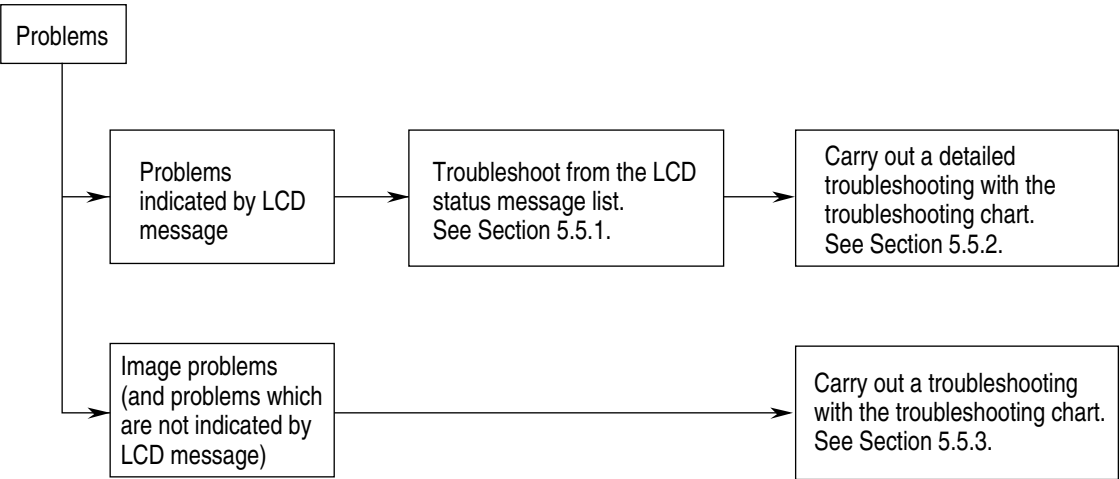
Status message display

Ready LED display

	: Off		: Blinking
	: On		: Undefined

5.5 Troubleshooting Flow

Should there be a problem with the printer, carry out troubleshooting according to the following procedure flow:



5.5.1 LCD Status Message/Problem List

The status and problems which may be displayed by messages on the LCD are listed in Table 5-1.

The following are the meaning of the symbols in the LCD display.

“TRAY2” is indicated only when the second tray is set, and “MPF” is displayed only when the multipurpose feeder is set.

xxxx: Emulation (AUTO, PCL, PSE, PPR, FX)
 tttt: Trays (TRAY1, TRAY2, MPF, MANUAL)
 mmmm: Paper Size (LETTER, A4 SIZE, ..., B5 SIZE, A6 SIZE)
 pppp: Media type (Plain, Transparency, ...)
 cccc: COVER (UPPER, TRAY2)

The following are indicated in the contents section of the displayed table.

(Job Account-related): Displayed only when the Job Account function is valid.
 (PSE-related): Displayed only when PSE is set.
 (PSE stands for Postscript3 Emulation. Only when PSE is set.)
 (TRAY2-related): Displayed only when TRAY2 is set.
 (RS232C-related): Displayed only when an RS232C card is set.
 (NIC items): Displayed only when an NIC card is set.

Table 5-1 (1/5)

Status level	LCD	LED	Description
Normal	ON-LINE xxxx	Light	Shows on-line status.
Normal	OFF-LINE xxxx	No Light	Shows off-line status.
Normal	FILE ACCESS	Varies	Accessing to an accounting file. (Job Account-related)
Normal	ARRIVE xxxx	Varies	Data receiving, process not started yet. Displayed mainly during PJP process without text print data or during job spooling.
Normal	ACTIVE xxxx	Blink	Data receiving output processing
Normal	DATA xxxx	Varies	Un-printed data remains in Buffer. Waiting for data to follow.
Normal	PRINTING	Varies	Printer is printing.
Normal	<input type="checkbox"/> <input type="checkbox"/> kkk/lll	Varies	Printing a copy. kkk indicates the number of sheet being printed. lll indicates the total number of sheets that have been printed. The display for normal printing is applied when the number of copies is one sheet. This item is displayed combined with a different message in the first line.
Normal	FLUSHING	Blink	Job cancellation has been instructed. Data is being ignored till the end of the job.
Normal	FLUSHING (JAM)	Blink	Indicates a status of discarding data until the end of a job after a job is cancelled when a jam is generated upon turning jam recovery OFF. MSG blinks only on the top LCD line.
Normal	FLUSHING (DENIED)	Blink	Cancelled as permission for printing has not been received. (Job Account-related) 1. MSG blinks only on the top LCD line when a job is received from a user who has not received permission for printing.
Warning	FLUSHING (LOG)	Blink	Indicates that a job has been cancelled as the area storing logs inside the printer has been drained and furthermore, a “cancel job” instruction appears when logs are full. (Job Account-related) MSG blinks only on the top LCD line.
Normal	<input type="checkbox"/> WARM UP	Varies	Indicates that the printer is now warming up. This item is displayed combined with a different message in the first line.
Normal	<input type="checkbox"/> PWR SAVE	Varies	A printer is in power save mode. Displayed combined with other messages in the first line.
Warning	<input type="checkbox"/> TONERLOW	Varies or Blink	Toner amount is low. Displayed combined with other messages in the first line. Normal operation is possible. Not displayed, when a drum counter is in 200 or less state or a “CHG DRUM” state. • In the case of “LOW TNR” of a menu is “STOP”, TONER LOW is usually detected from a state, LED is blinked, and it once becomes OFF-LINE. It will be in an ON-LINE state by cover opening and closing under push ON-LINE SW. If blink will be in an ON-LINE state, it will usually return to a state.

Table 5-1 (2/5)

Status level	LCD	LED	Description
Warning	<input type="checkbox"/> TONEREMP	Varies	Toner near empty. (This state occurs after printing 100 sheets from TONERLOW.) Displayed combined with other messages in the first line. Not displayed when "CHG DRUM" for drum life is displayed, however. Possible to cancel print job or continue normal operation.
Warning	<input type="checkbox"/> TONERSNS	Varies	Something is wrong with the toner sensor. Displayed combined with other messages in the first line when the engine is set to Shipping mode. Normal operation is possible. Error, explained later, is displayed when the engine is set to Factory mode.(ERR 163)
Warning	<input type="checkbox"/> CHG DRUM	Varies	Drum cartridge life (Warning). Displayed combined with other messages of the first line. TONER EMP ERROR status code is set to 10969 in the state of warning which has restored temporarily CHG DRUM ERROR (40996) when the drum life has occurred at the same time by cover open/close presses "ON-LINE" switch. A status code is set to 10060 in the state of CHG DRUM independent warning.
Normal	PRINT DEMO	Varies or Blink	Demo page printing.
Normal	PRINT FONTS	Varies or Blink	Fonts sample printing.
Normal	PRINT MENU MAP	Varies or Blink	Menu map printing.
Normal	PRINT FILELIST	Varies or Blink	File list printing.
Normal	PRINT CLEANING	Varies or Blink	Cleaning page printing.
Warning	INVALID DATA	Varies	Received invalid data. Prompts the user to press ON-LINE switch to clear Warning display. Displayed when the printer receives an unsupported PDL command.
Warning	<input type="checkbox"/> ERR PSE	Blink	Interpreter detects an error due to following reasons. Data received after this is ignored till the end of the job. When the job is received completely, this is automatically cleared. - The job has a grammatical error. - The page is complicated, and VM was used up.
Warning	<input type="checkbox"/> tttt EMPTY	Varies	Tray tttt has run out of paper. Handled as Warning until the user designates the tray that has run out of paper. * Scroll display
Warning	<input type="checkbox"/> TRAY2 COVER OPEN	Varies	Second Tray Cover Open * Scroll display
Warning	<input type="checkbox"/> FILE SYSTEM IS FULL	Varies	Flash Full has occurred. This is a transient warning. Displayed until the job is completed, then, cleared. * Scroll display
Warning	<input type="checkbox"/> FILE IS WRITE PROTECTED	Varies	An attempt to write in a write-protected file was made. Because this is a transient warning, it is displayed until the job is completed. then, cleared. * Scroll display
Warning	<input type="checkbox"/> INVALID ID.JOB REJECTED	Varies	Notifies a user that the job has been cancelled as permission for printing has not been received. (Job Account-related) This is displayed until the ON LINE key is pressed. * Scroll display.
Warning	<input type="checkbox"/> LOG BUFFER FULL. JOB REJECTED	Varies	Notifies a user that the job has been cancelled as the log buffer is full. (Job Account-related) This is displayed until the ON LINE key is pressed. * Scroll display.
Warning	<input type="checkbox"/> FILE OPERATION FAILED nnn	Varies	A FLASH error other than No.26 and No.27 has occurred. Operation that does not use FLASH is possible. * Scroll display
Error	MANUAL mmmm REQUEST	Light	Manual print request. Prompts the user to set paper indicated by mmmm manually. * Scroll display

Table 5-1 (3/5)

Status level	LCD	LED	Description
Error	LOAD mmm tttt EMPTY	No Light	Indicates that a print request was sent to the tttt tray that has become empty. A message for setting mmmm paper. TRAY1 TRAY2 MPF * Scroll display.
Error	CLOSE COVER TRAY2 COVER OPEN	No Light	Print request has been made to the 2nd tray route cover open. To continue, close cover. * Scroll display
Error	CHANGE PAPER TO mmmm/pppp tttt MEDIA MISMATCH	No Light	The media type in the tray and the edit media type do not match. TRAY1 TRAY2 MPF * Scroll display
Error	CHANGE PAPER TO mmmm/pppp tttt SIZE MISMATCH	No Light	The paper size in the tray and the edit size do not match. TRAY1 TRAY2 MPF * Scroll display
Error	RS232C OVERFLOW	No Light	RS232C Overflow has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	RS232C OVER RUN	No Light	RS232C Over Run has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	RS232C PRY ERR	No Light	RS232C Parity Error has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	RS232C FRM ERR	No Light	RS232C Framing Error has Occurred. To continue, press ON-LINE switch(RS232C related)
Error	NETWORK INITIAL	Varies	Initializing (rebooting) a section related to NIC. MSG blinks only on the top LCD line. (NIC-related)
Error	TONEREMP CHG CART	No Light	Toner Low has passed, and almost no toner is left in the cartridge. For temporary operation, open/close the cover or press "ON-LINE" switch, to recover the printer operation. But basically you must change the toner cartridge. Displayed after printing 100 sheets after Toner Low was sensed, to prompt the user to change the cartridge. after this, the printer recovers with Cover Open/Close or when user presses "ON-LINE" switch, then, after printing 30 pages, this message is displayed. Even after this, the printer recovers when the user opens and closes the cover, or he presses the "ON LINE" switch, but this message is displayed for each sheet ejected. During Change Drum Alarm, however, "CHG DRUM /(the lower line spaces), not this message, is displayed, to prompt the operator to replace the drum, and prevent him from replacing the toner.
Error	MEMORY OVERFLOW	No Light	Memory capacity has overflowed due to the following reasons. To continue, press ON-LINE switch. Install expansion RAM or decrease the data amount. - Too much print data in a page. - Too much Macro data. - Too much DLL data. - After frame buffer compression, overflow has occurred. * Scroll display
Error	OPEN UPPER COVER PAPER SIZE ERROR	No Light	Warns that paper of the inappropriate size has been fed from the tray. Check whether Multi-feed has happened. To continue for Recovery Print, open and close the cover. * Scroll display
Error	CHECK tttt PAPER JAM	No Light	Paper jam occurred when paper was being fed from tttttt tray. TRAY1 TRAY2 MPF * Scroll display
Error	OPEN UPPER COVER PAPER JAM	No Light	Jam has occurred in the paper path. Paper Feed Transport (Message of 10.5 is displayed) * PN262 does not distinguish jam type or tray. * Only Exit jam is identified. * Scroll display

Table 5-1 (4/5)

Status level	LCD	LED	Description
Error	OPEN UPPER COVER EXIT JAM	No Light	Jam occurred when paper was exiting. Open the cover and remove the paper inside the printer. Close the cover to continue for Recovery Print. * Scroll display
Error	CHG DRUM	No Light	Notifies the user of the drum life. For temporary operation, open/ close the cover or press "ON-LINE" switch, to recover the printer operation. But basically you must change the drum. If Change Drum Alarm occurs at Toner Empty display timing, this message is displayed. This prompts the user to replace the drum, and prevent him from replacing the toner.
Error	CHECK IMAGE DRUM DRUM MISSING	No Light	Indicates that the drum is not set properly.
Error	CLOSE COVER UPPER COVER OPEN	No Light	The cover is open. UPPER Stacker * Scroll display
-	DL MODE xxxx	Varies	Downloading via NIC. The download status is indicated in the bottom line. Refer to the Network specifications for details. (NIC- related)
Error	POWER OFF/ON NETWORK ERROR	No Light	Network error has occurred. * Scroll display
-	REBOOT X	No Light	This message is displayed when the printer is rebooted. The lower display shows the code indicating the reason for the reboot. Reason Codes (X): 0: Factor(s) other than those shown below 1: PjL command reception 2: Operation panel operation 3: PostScript quit operator 4: Specification mode via network
Fatal	ERR nnn	No Light	Note: The following error names are not displayed: * Scroll display
020			CU ROM Hash Check Error 1
030			CU Slot1 DIMM RAM Check Error
034			RAM configuration error
035			Slot1 RAM Spec error
040			CU EEPROM ERROR
041			CU FLASH ERROR
042			FLASH FILE SYSTEM ERROR
043			FLASH FILE SYSTEM VERSION MISMATCH
050			Operator Panel Error
051			CU FAN ERROR
063			HOST_IF_NO_DRIVER:PCI
070			CANT_HAPPEN
072			Engine communication error
073			H/W overrun detect
074			F/W Overrun detect
075			VIC Limutter
076			VIC decomp write error (reserved: for monochrome product only)
077			VIC illegal decomp error (reserved: for monochrome product only)
102			Engine RAM Error (Reserved)
103			Engine SRAM Error (Reserved)
106			Engine Control Error
120			PU Board Fan Motor Error
121			Power Supply LSI Error (Reserved)

Table 5-1 (5/5)

Status level	LCD	LED	Description
122	ERR nnn	No Light	Power Supply Fan Motor Error (Reserved)
123			Humidity Sensor (Reserved)
124			Temperature Sensor (Reserved)
125			Multi purpose tray home error (Reserved)
130			LED Head Over Temperature
134			LED Head Missing, Color: Black (Reserved)
143			Drum Up/Down, Color: Black (Reserved)
163			Toner Sensor Error, Color: Black
170			Upper Thermistor, State: Short
171			Upper Thermistor, State: Open
172			Upper Heater Temp, State: High
173			Upper Heater Temp, State: Low
179			Fuser Mismatch (Reserved)
180			I/F Error, Loc: Envelop feeder
182			I/F Error, Loc: Tray2
187			I/F Error, Loc: Control Panel (Reserved)
190			System Memory Overflow
200			PU F/W download check SUM error (Reserved)
201			PU F/W Flash write error (Reserved)
202			PU F/W Flash data missing (Reserved)
203			IMAGE ACK illegal page ID
204			IMAGE SET Trans error (Reserved)
205			No page at DUP IN (Reserved)
206			No page at PPOUT
207			Illegal function call
208			Parameter error
210			EM Null page cargo
211			EM Null page
212			EM No video queue
213			EM Illegal sequence
001	INITIAL-IZING	No Light	Machine check Exception
002			DSI Exception
003			ISI Exception
004			Alignment Exception
005			Program Exception
006			Floating-point unavailable Exception
007			Instruction address breakpoint Exception
008			Thermal management interrupt Exception
009			Instruction TLB miss
010			Data TLB miss
011			Data TLB store miss
Normal			Indicates that the controller side is initializing.
Normal	EEPROM RESET'NG	No Light	Indicates that EEPROM is initializing.
-	RAM CHK *****	No Light	Indicates that the RAM is being checked. * is indicated after each time one-eighth of the total space is checked.
Normal	■■■■■■■■■■ ■■■■■■■■■■	No Light	Displayed at power ON.

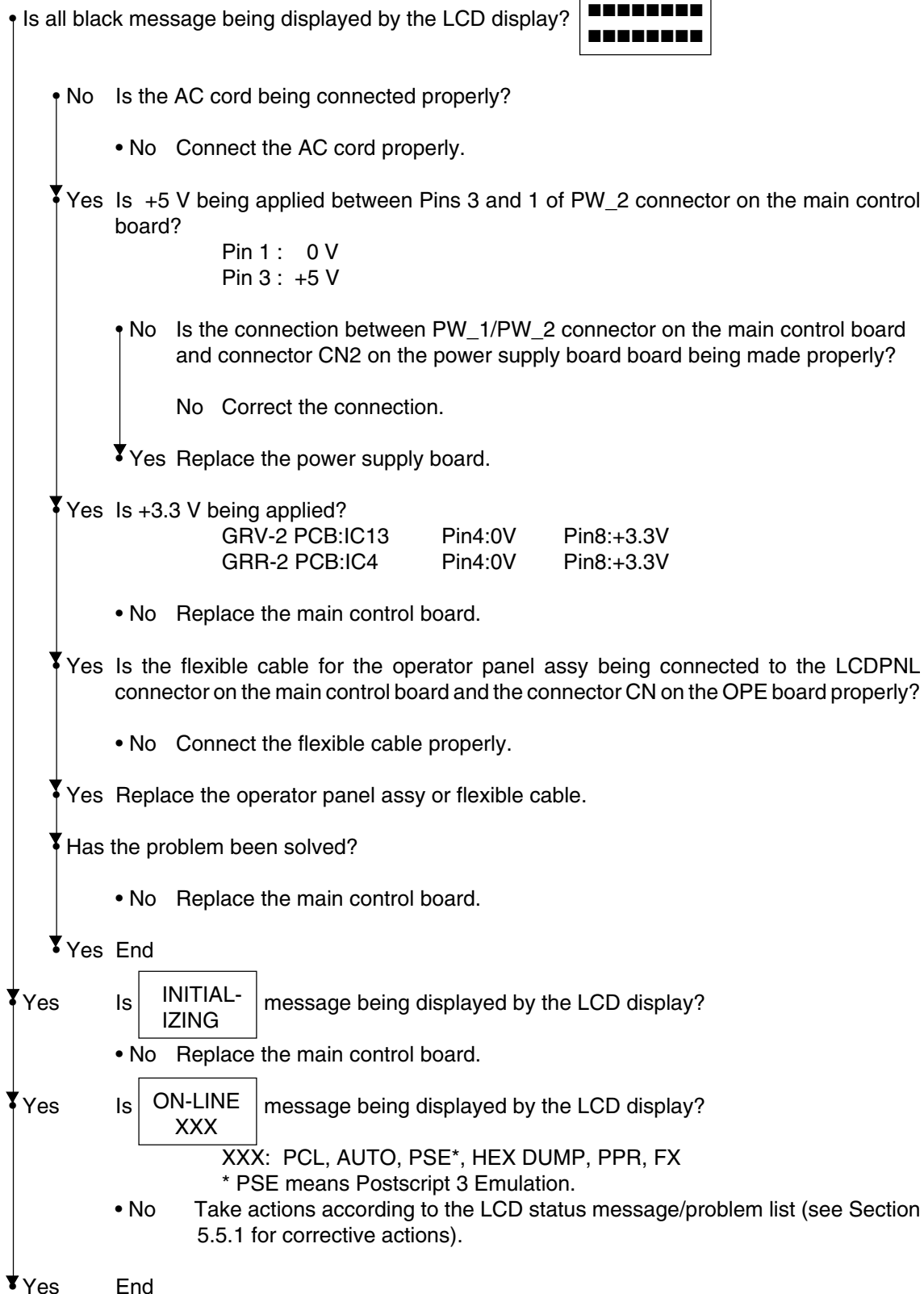
5.5.2 LCD Message Troubleshooting

If the problems cannot be corrected by using the LCD status message/problem list, follow the troubleshooting flowcharts given here to deal with them.

No.	Trouble	Flowchart number
1.	The printer does not work normally after the power is turned on.	①
2.	Jam alarm <ul style="list-style-type: none"> — Paper input jam — Paper feed jam — Paper exit jam 	②-1 ②-2 ②-3
3.	Paper size error	③
4.	Fusing unit error	④
5.	SSIO (Synchronous Serial Input/Output) error I/F timeout (no response) between the printer and an optional tray (High Capacity Second Paper Feeder, Power Envelope Feeder).	⑤
6.	Fan error	⑥

① The printer does not work normally after the power is turned on.

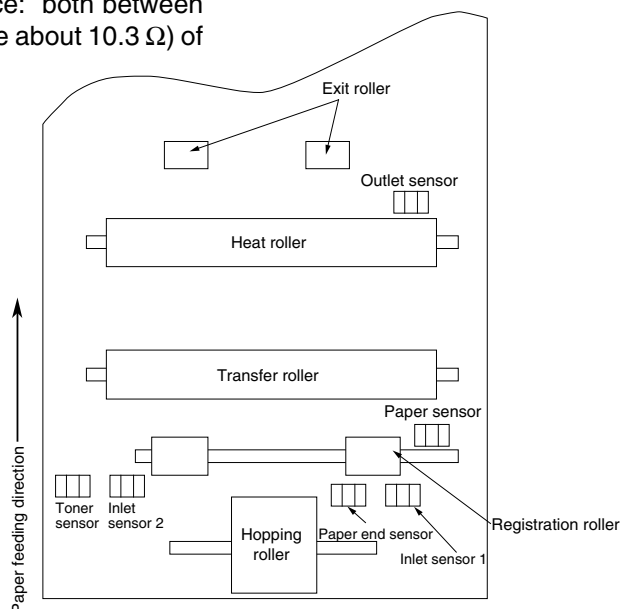
- Turn the power off, then back on.



[JAM error]

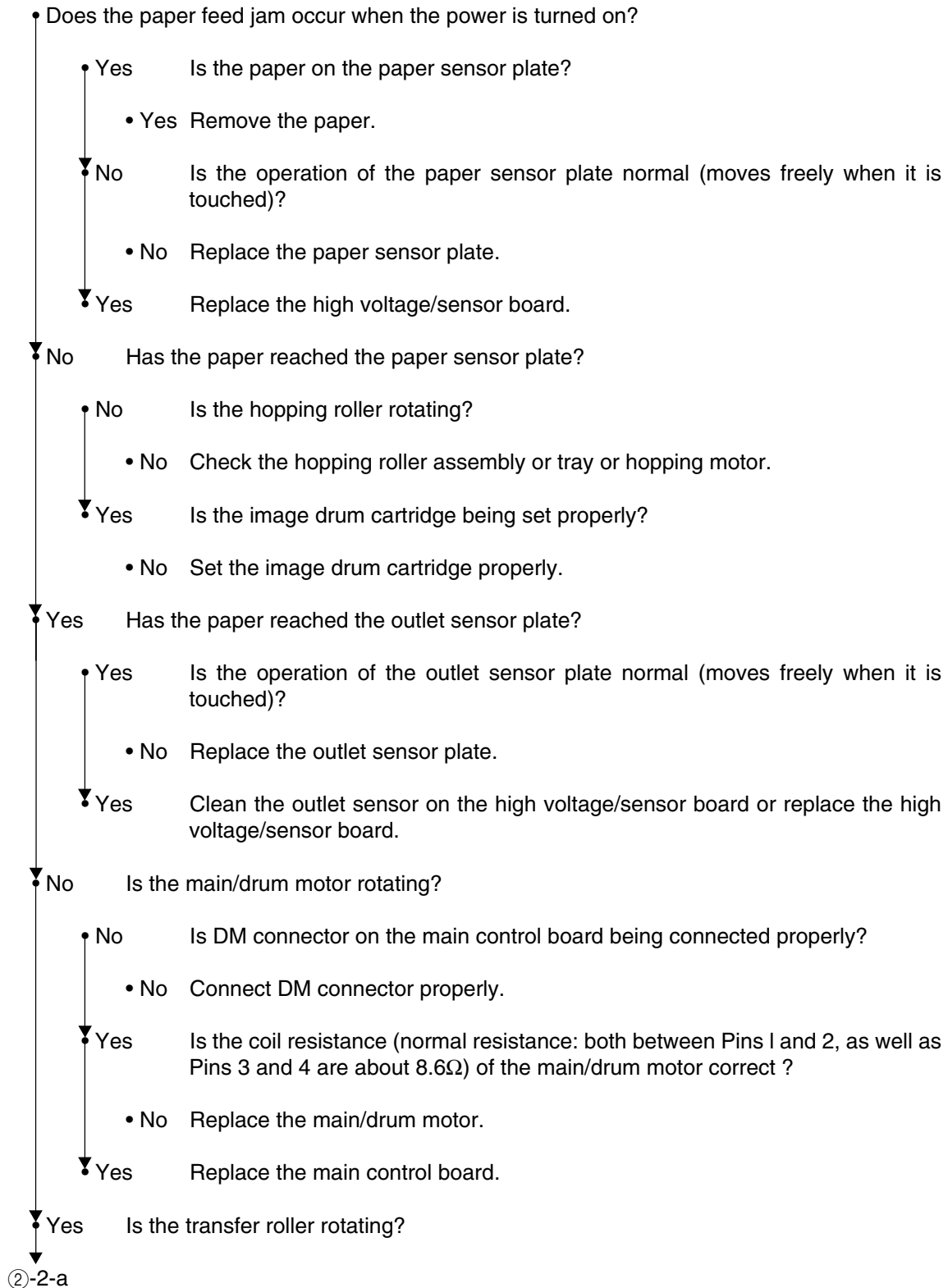
②-1 Paper input jam

- Does the JAM error occur when the power is turned on?
 - Yes Is the paper at the inlet sensor?
 - Yes Remove the paper.
 - No Is the operation of the inlet sensor plate normal (moves freely when it is touched)?
 - No Replace the inlet sensor plate.
 - Yes Clean the inlet sensor on the high voltage/sensor board, or replace the high voltage/sensor board.
- No Does the JAM alarm occur after paper feeding?
 - Yes Is the paper fed to the inlet sensor plate?
 - Yes Is the operation of the input sensor plate normal (moves freely when it is touched)?
 - No Replace the inlet sensor plate.
 - Yes Clean the inlet sensor on the high voltage/sensor board or replace the high voltage/sensor board.
 - No Replace the hopping roller rubber or paper cassette.
- No Is the hopping roller rotating?
 - Yes Set the paper tray properly.
- No Is the hopping motor rotating?
 - Yes Replace the one-way clutch gear of the hopping roller assembly.
- No Is HM connector on the main control board being connected properly?
 - No Connect HM connector properly.
- Yes Is the coil resistance (normal resistance: both between Pins 1 and 2, as well as Pins 3 and 4 are about 10.3 Ω) of the hopping motor normal?
 - No Replace the hopping motor.
- Yes Replace the main control board.



[JAM error]

②-2 Paper feed jam



②-2-a

- No Check the gears (transfer roller gear, idle gear and reduction gear).
- ▼ Yes Is the fusing unit being installed properly?
 - No Install the fusing unit properly.
- ▼ Yes Is the image drum cartridge being set properly?
 - No Set the image drum cartridge properly.
- ▼ Yes Clean the paper sensor on the high voltage/sensor board or replace the high voltage/sensor board.

[JAM error]

②-3 Paper exit jam

- Does the paper exit jam error occur when the power is turned on?
 - Yes Is the paper on the outlet sensor plate?
 - Yes Remove the paper.
 - ▼ No In the operation of the outlet sensor plate normal (moves freely when it is touched)?
 - No Replace the outlet sensor plate.
 - ▼ Yes Clean the outlet sensor on the high voltage/sensor board or replace the high voltage/sensor board.
- ▼ No Is the face-up stacker pulled out completely from the printer or, pushed into the printer completely?
 - No Pull the face-up stacker out of the printer completely or push it into the printer completely.
- ▼ Yes Is the eject roller assembly being installed properly?
 - No Install the eject roller assembly properly.
- ▼ Yes Has the coil spring come off the eject roller assembly?
 - Yes Install the coil spring to the eject roller assembly.
- ▼ No Replace the eject roller assembly.

③

Paper size error

• Is paper of the specified size being used?

- No Use paper of the specified size.

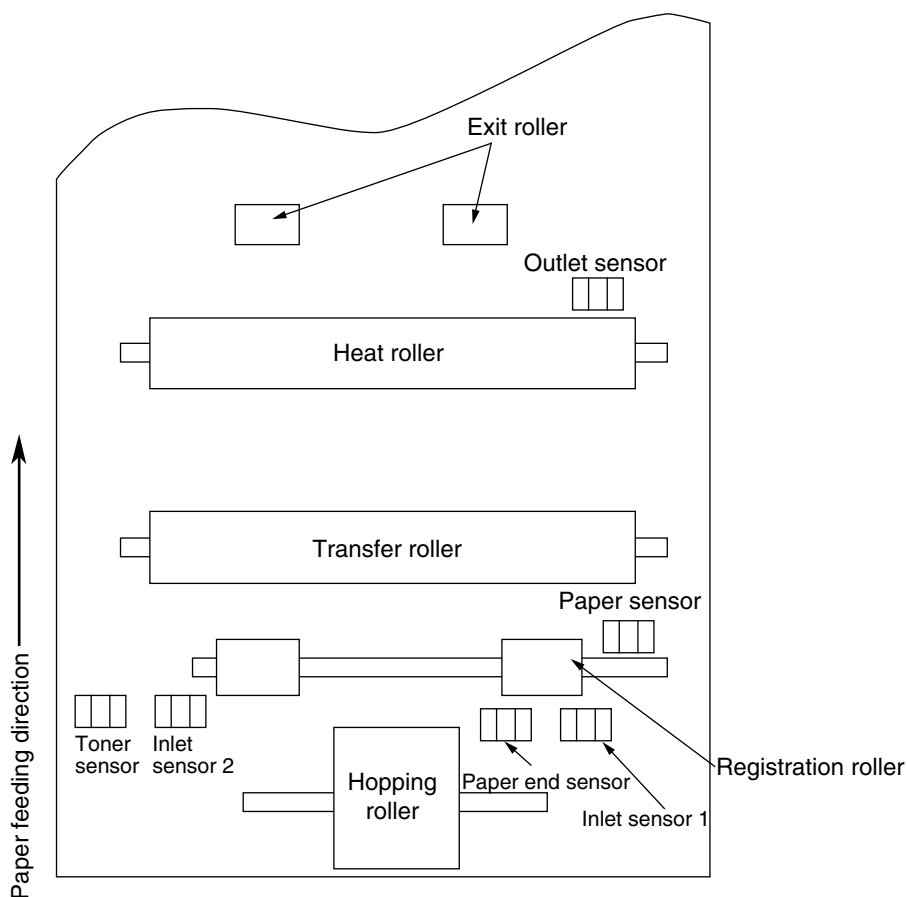
▼ Yes Are inlet sensor plates 1 and 2 operating properly (moves freely when they are touched)?

- No Replace the inlet sensor plate or clean the inlet sensor on the high voltage/sensor board.

▼ Yes Does the outlet sensor plate operate properly (moves freely when it is touched)?

- No Replace the outlet sensor plate or clean the outlet sensor on the high voltage/sensor board.

▼ Yes Replace the high voltage/sensor board.



④ Fusing unit error (ERROR 170) (ERROR 171) (ERROR 172) (ERROR 173)

- Turn the power off, then back on again.

- ▼ Yes Is the thermistor open or shorted? Measure the resistance between thermistor contacts (heater contacts 120V/2Ω or 240V/7Ω, and thermistor contacts 200KΩ at room temperature) (see Figure 5-2).
 - Yes Replace the fusing unit.
- ▼ No Do the thermistor connector is connected to the main control board connector?
 - No Connect the thermistor connector property.
- ▼ Yes Is the heater of the fusing unit turned on (when the heater is turned on, light is emitted)?
 - Yes Check the thermistor connector or replace the main control board or the fusing unit.
- ▼ No Is the AC voltage being supplied to the connector for the heater of the power supply board? (see Figure 5-2)
 - No Replace the main control board or the power supply board.
- ▼ Yes Check the heater connector cord and the heater connector for poor contact .

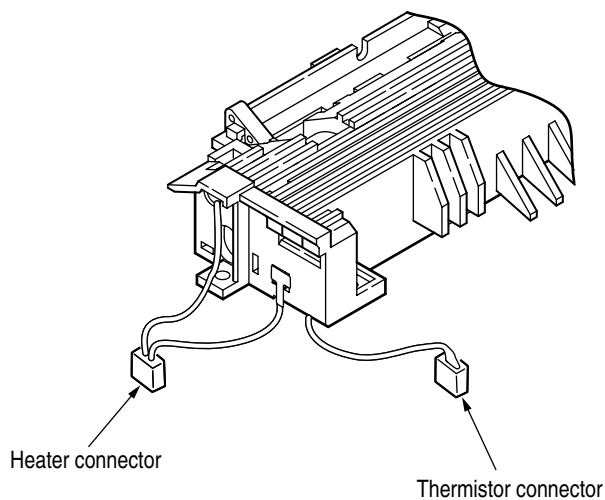
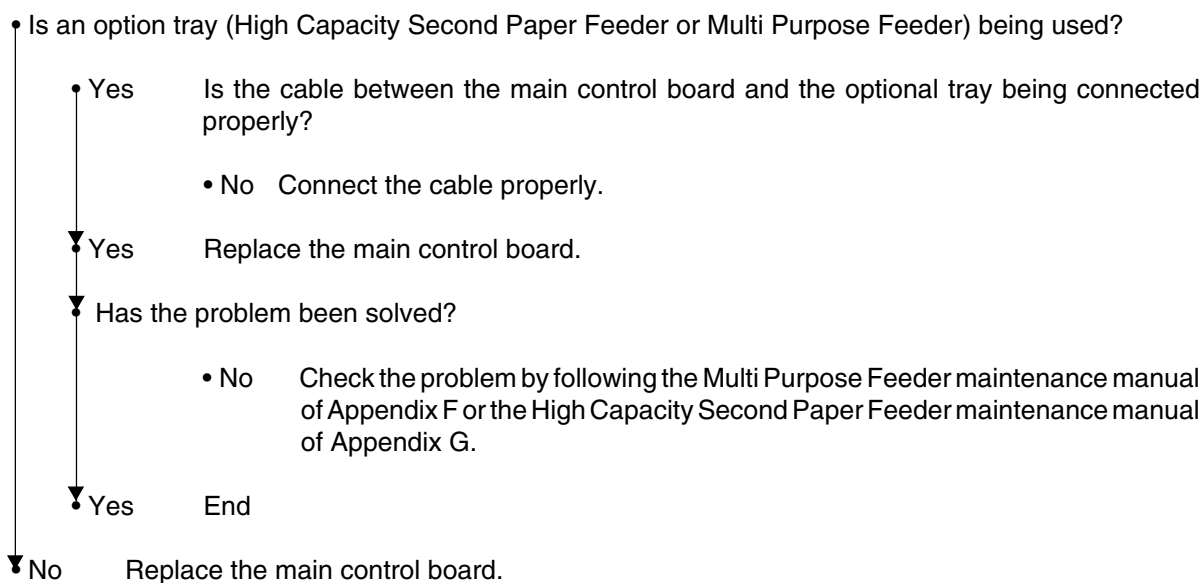
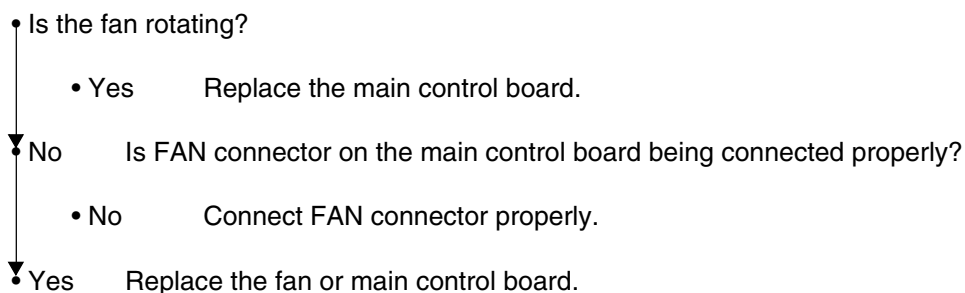


Figure 5-2

⑤ Synchronous serial I/O error or I/F timeout between printer and optional tray
(ERROR 180, 182)



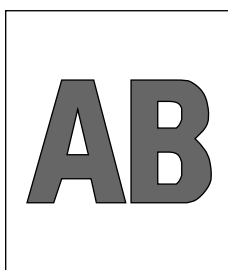
⑥ Fan error (ERROR 120)



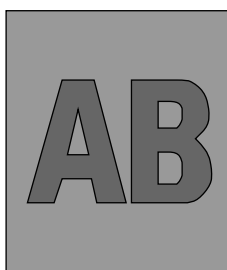
5.5.3 Image Troubleshooting

Procedures for troubleshooting for abnormal image printouts are explained below. Figure 5-3 below shows typical abnormal images.

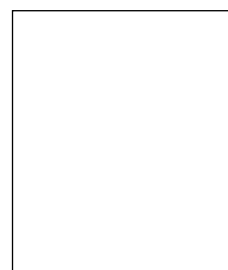
Problem	Flowchart number
Images are light or blurred entirely (Figure 5-3 (A))	①
Dark background density (Figure 5-3 (B))	②
Blank paper is output (Figure 5-3 (C))	③
Black vertical belts or stripes (Figure 5-3 (D))	④
Cyclical defect (Figure 5-3 (E))	⑤
Prints voids	⑥
Poor fusing (images are blurred or peels off when the printed characters and images on the paper are touched by hand)	⑦
White vertical belts or streaks (Figure 5-3 (F))	⑧



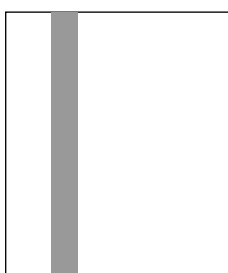
Ⓐ Light or blurred images entirely



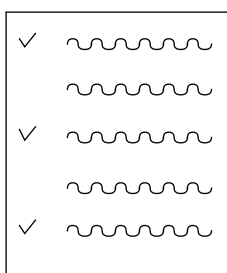
Ⓑ Dark background density



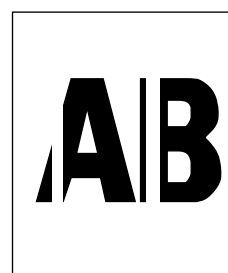
Ⓒ Blank paper



Ⓓ Black vertical belts or stripes



Ⓔ Cyclical defect



Ⓕ White vertical belts or streaks

Figure 5-3

① Images are light or blurred entirely.

• Is toner low (is the TONER LOW message displayed)?

- Yes Supply toner.

▼ No Is paper of the specified grade being used?

- No Use paper of the specified grade.

▼ Yes Is the lens surface of the LED head dirty?

- Yes Clean the lens.

▼ No Is the LED head being installed properly (check the HEAD connector of the main control board and PC connector on the LED head for proper connection)?

- No Install the LED head properly.

▼ Yes Is the contact plate of the transfer roller in contact with the contact assembly of the power supply/sensor board properly (see Figure 5-5)?

- No Adjust the contact plate of the transfer roller to make a proper contact with the high voltage/sensor board and shaft of the transfer roller.

▼ Yes Are the contact of the developing roller and the contact of the toner supply roller of the image drum cartridge in contact with the contact assembly properly (see Figure 5-4 (A) and (B))?

- No Adjust the contacts of the developing and toner supply roller to make a proper contact with the contact assembly.

▼ Yes Replace the transfer roller.

▼ Has the problem been solved?

- Yes End

▼ No Replace the image drum cartridge.

▼ Has the problem been solved?

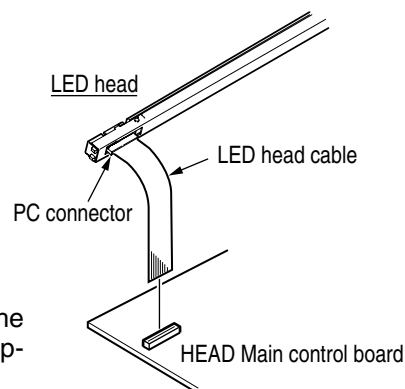
- Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

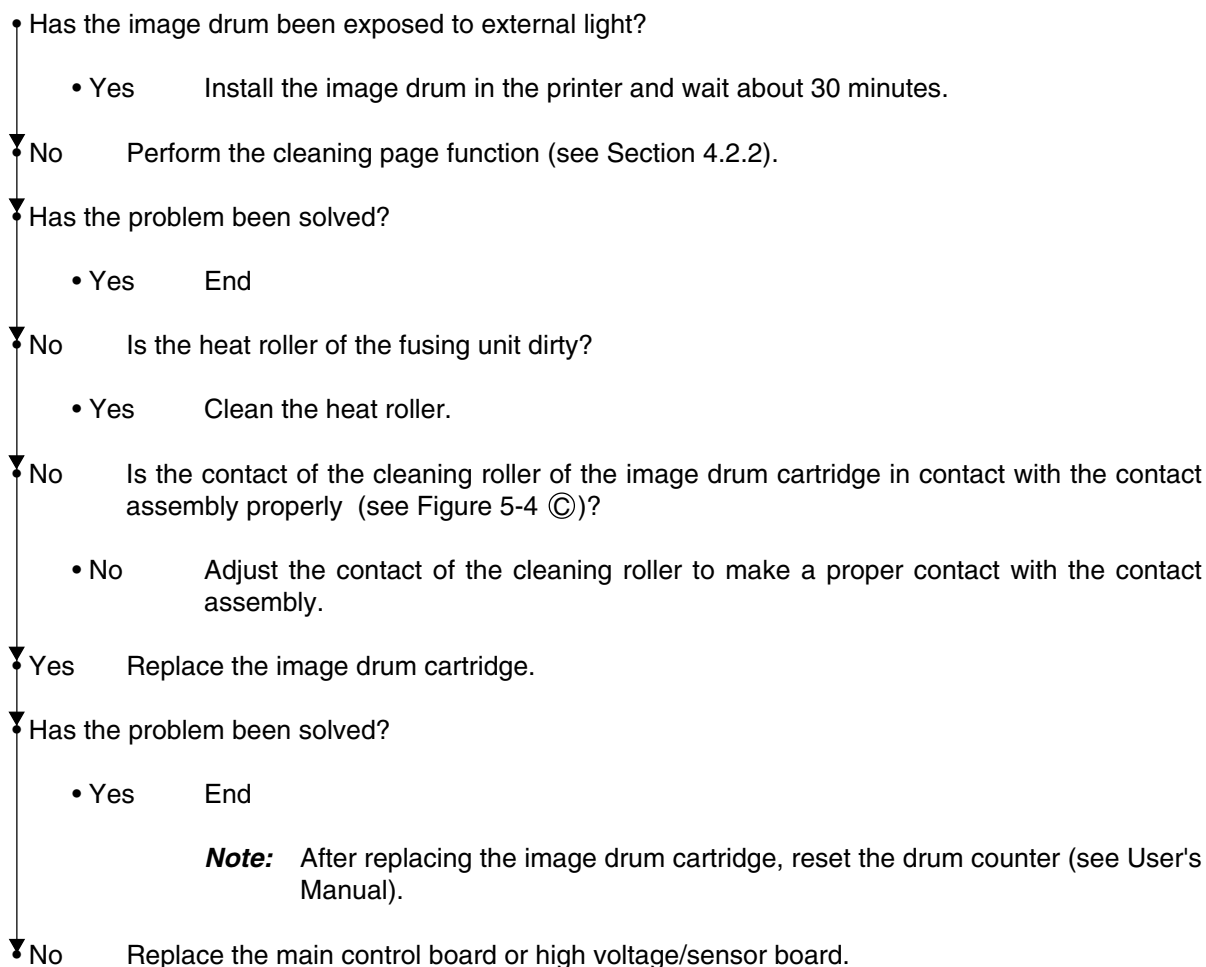
▼ No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?

- No Replace the back-up roller or bias spring.

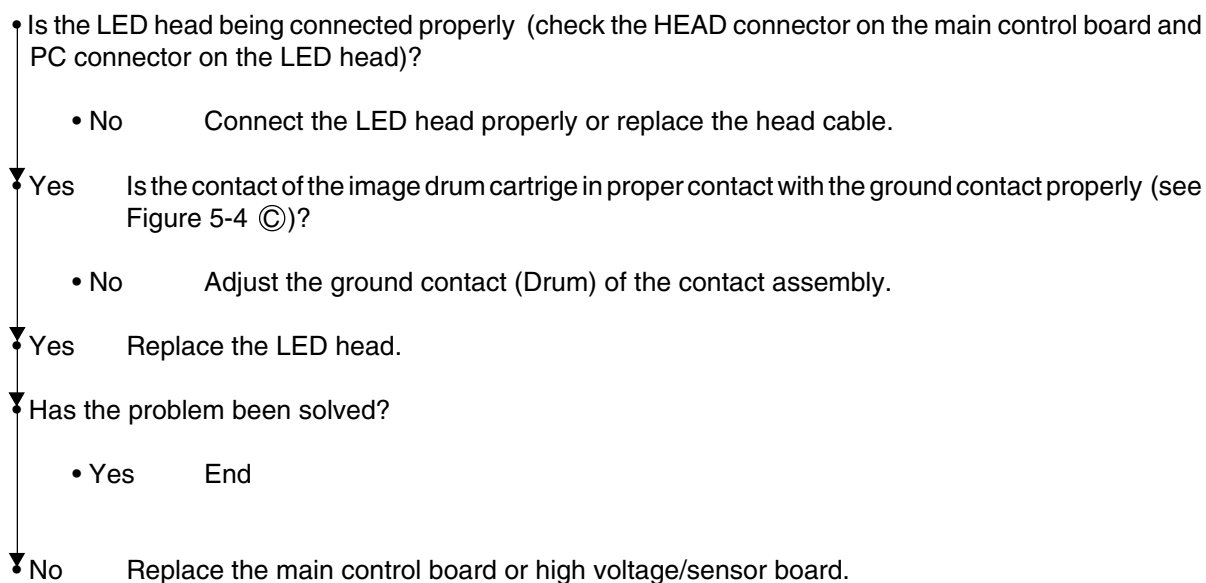
▼ Yes Replace the main control board or high voltage/sensor board.



② Dark background density



③ Blank paper is output.



④ Black vertical belts or stripes

- Perform the cleaning page function (see Section 4.2.2).

▼ Has the problem been solved?

- Yes End.

▼ No Replace the image drum cartridge.

▼ Has the problem been solved?

- Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

▼ Clean the LED lens array of the LED head.

▼ Has the problem been solved?

- Yes End.

▼ No Replace the LED head.

▼ Has the problem been solved?

- Yes End

▼ No Replace the main control board or high voltage/sensor board.

⑤ Cyclical defect

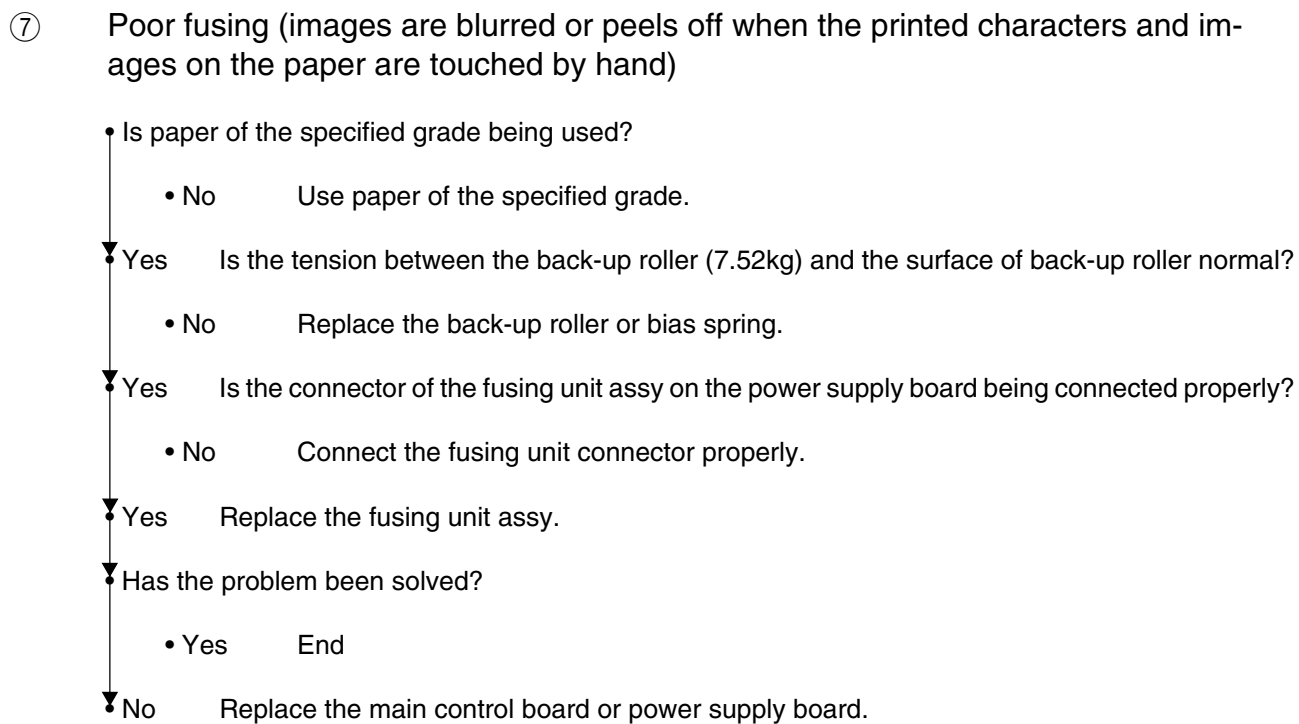
	Frequency	Remedy
Image drum	3.71" (94.2mm)	Replace or clean the image drum cartridge.
Developing roller	1.86" (47.12mm)	Replace the image drum cartridge.
Toner supply roller	2.96" (75.27mm)	Replace the image drum cartridge.
Charging roller	1.21" (30.63mm)	Replace the image drum cartridge.
Cleaning roller	0.93" (23.56mm)	Replace the image drum cartridge.
Transfer roller	1.95" (49.6mm)	Replace the transfer roller.
Heat roller	2.44" (62.0mm)	Replace the fusing unit assy.
Back-up roller	2.73" (69.4mm)	Replace the back-up roller.

Notes: After replacing the image drum cartridge, reset the drum counter (see User's Manual).

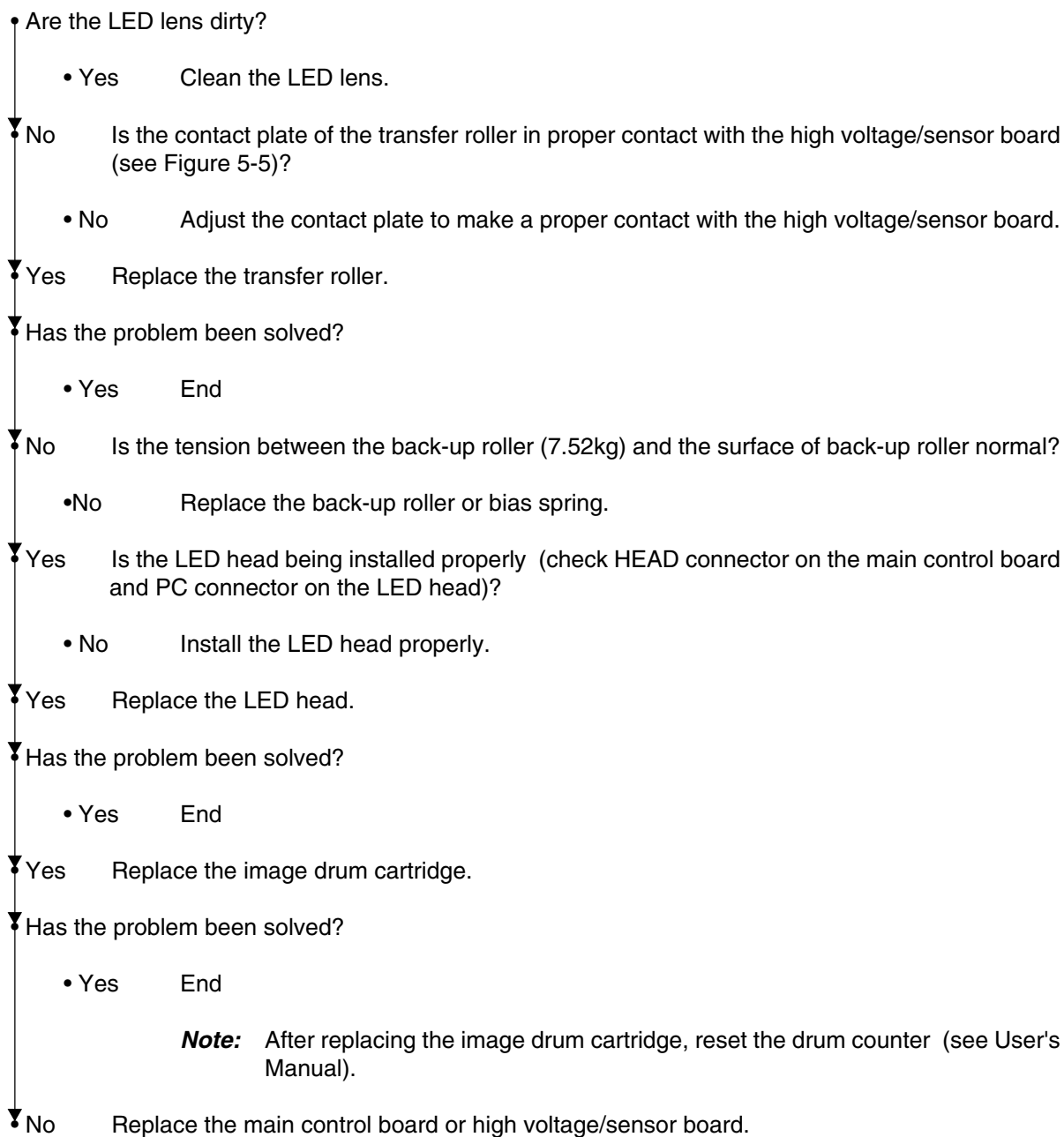
⑥ Prints voids

- Is the contact plate of the transfer roller in proper contact with the high voltage/sensor board (see Figure 5-5)?
 - No Adjust the contact plate so that it touches the high voltage/sensor board and the shaft of the transfer roller properly.
- ▼ Yes Replace the transfer roller.
- ▼ Has the problem been solved?
 - Yes End
- ▼ No Is the tension between the back-up roller (7.52kg) and the surface of back-up roller normal?
 - No Replace the back-up roller or bias spring.
- ▼ Yes Are the contacts of the toner supply roller, developing roller, image drum and charging roller in proper contact with the contact assy (see Figure 5-4 (A),(B),(C),(D),(E))?
 - No Adjust the contacts so that they touch the contact assy properly.
- ▼ Yes Replace the image drum cartridge.
- ▼ Has the problem been solved?
 - Yes End

Note: After replacing the image drum cartridge, reset the drum counter (see User's Manual).
- ▼ No Is the LED head being installed properly (check HEAD connector on the main control board and PC Connector on the LED head)?
 - No Install the LED head properly.
- ▼ Yes Replace the LED head or the head cable.
- ▼ Has the problem been solved?
 - Yes End
- ▼ No Replace the main control board or high voltage/sensor board.



⑧ White vertical belts or streaks



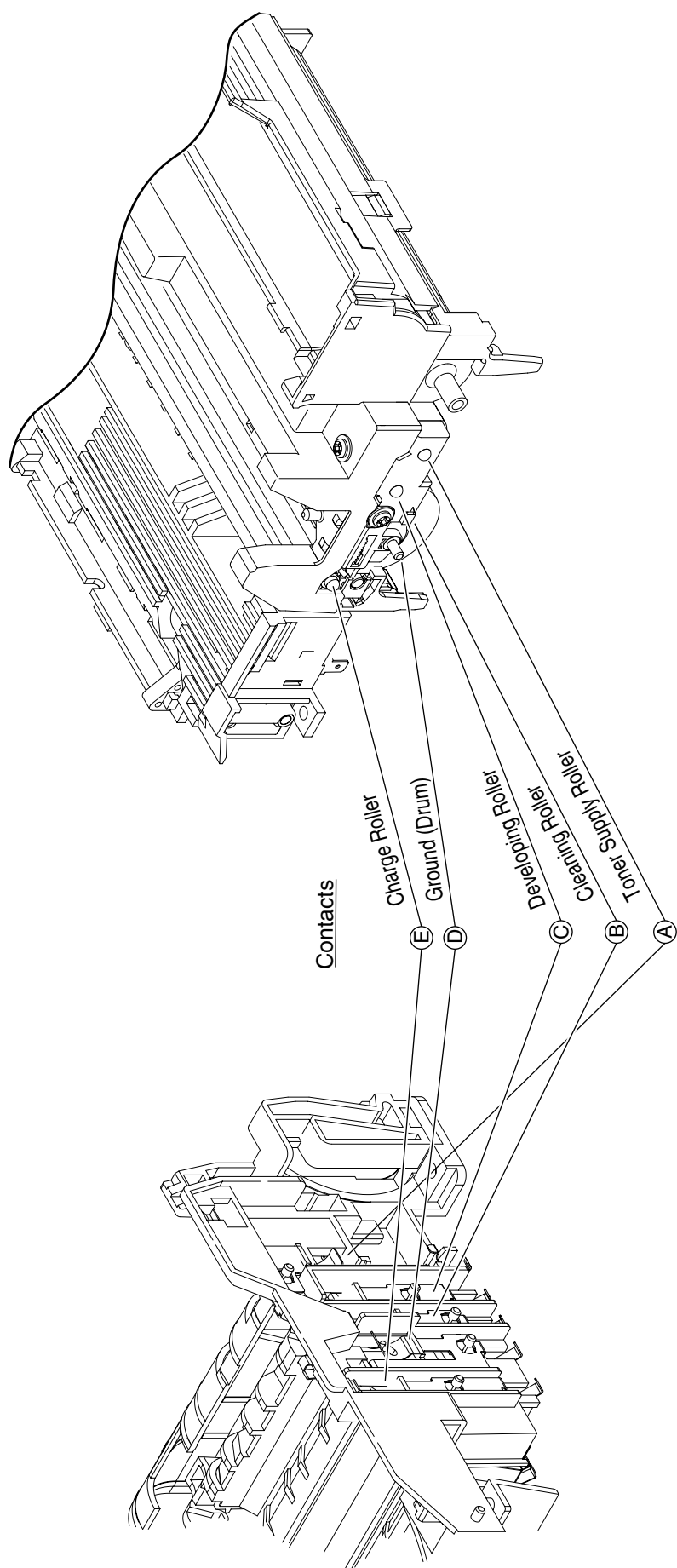


Figure 5-4

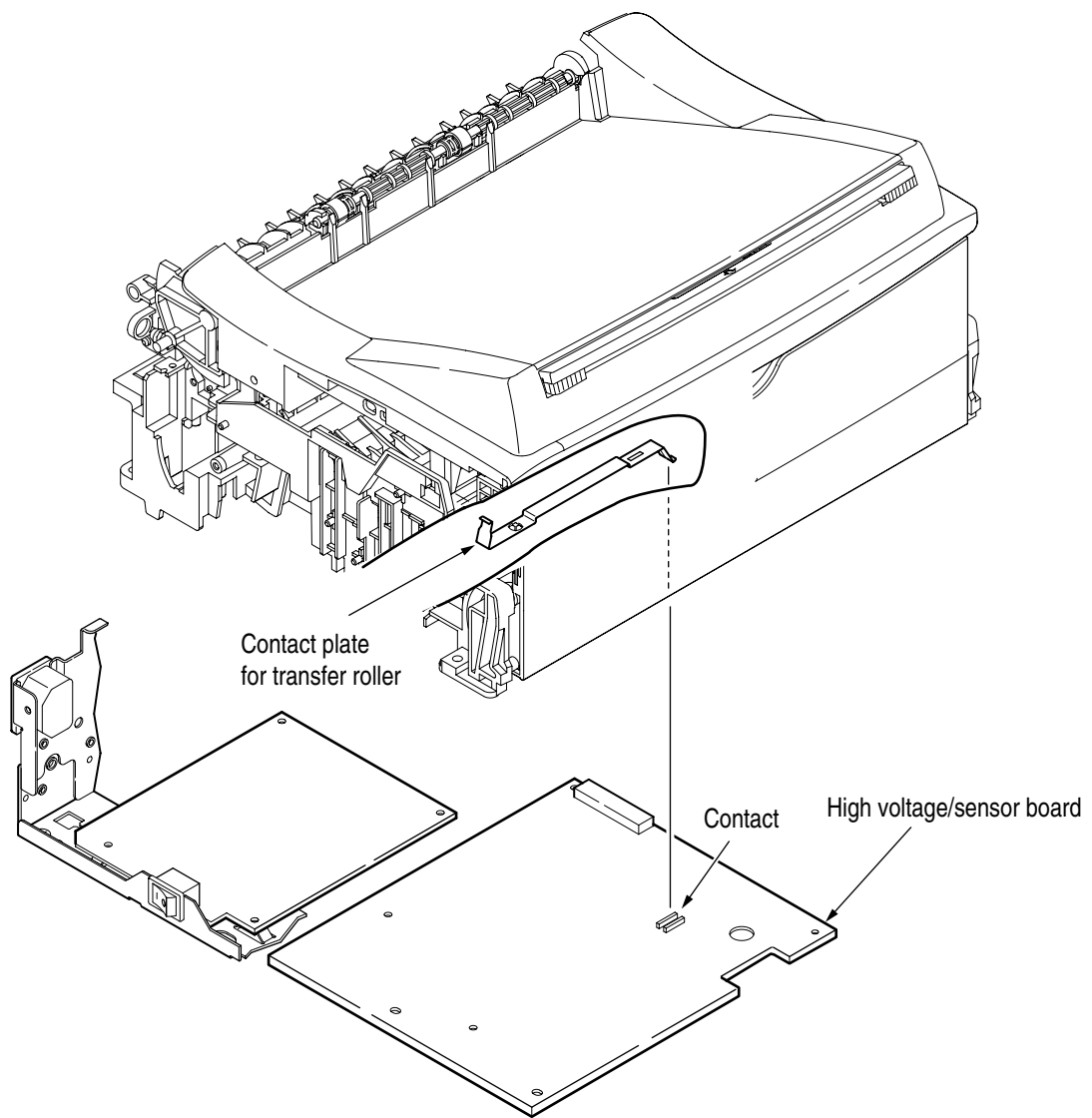
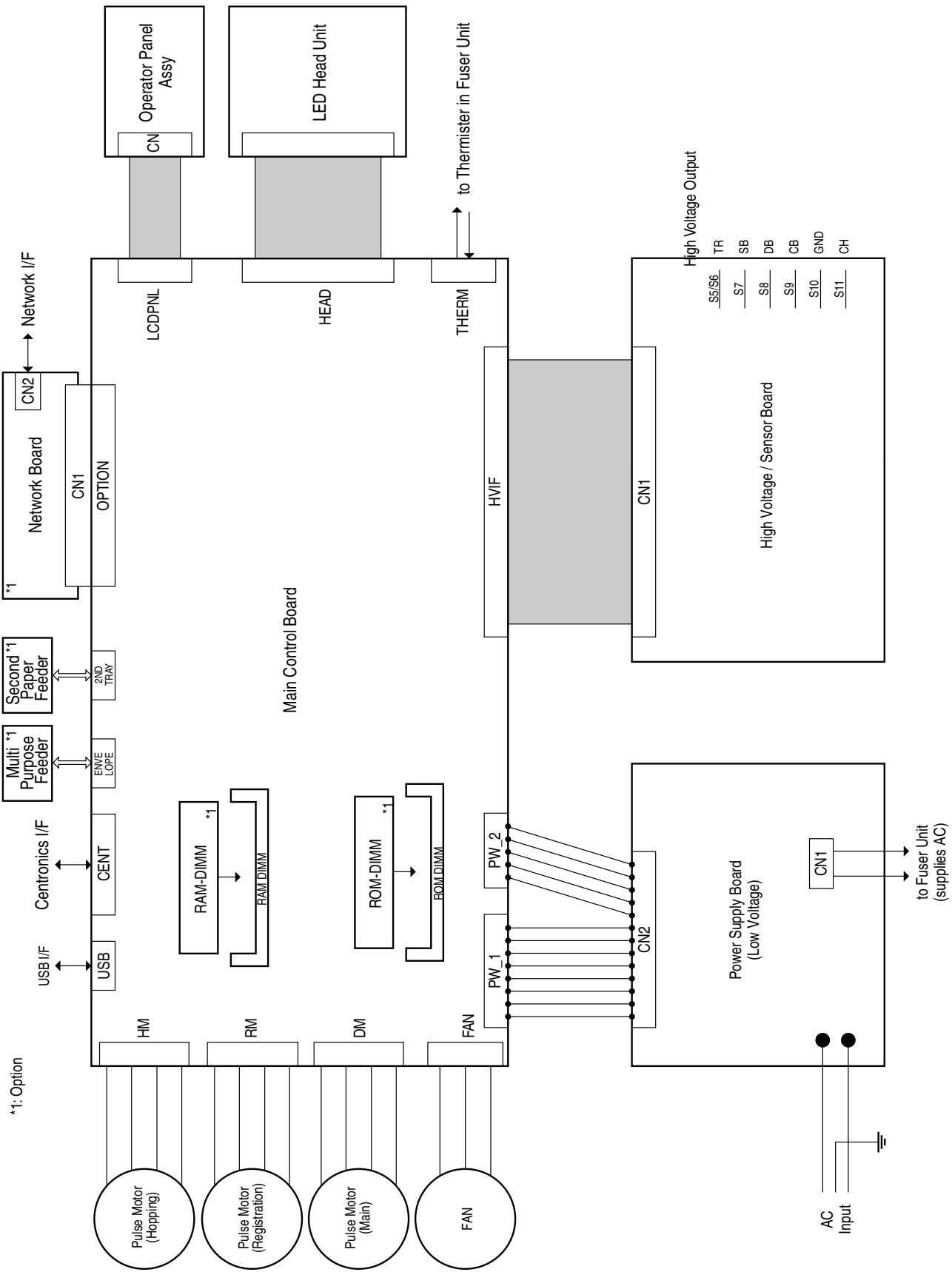


Figure 5-5

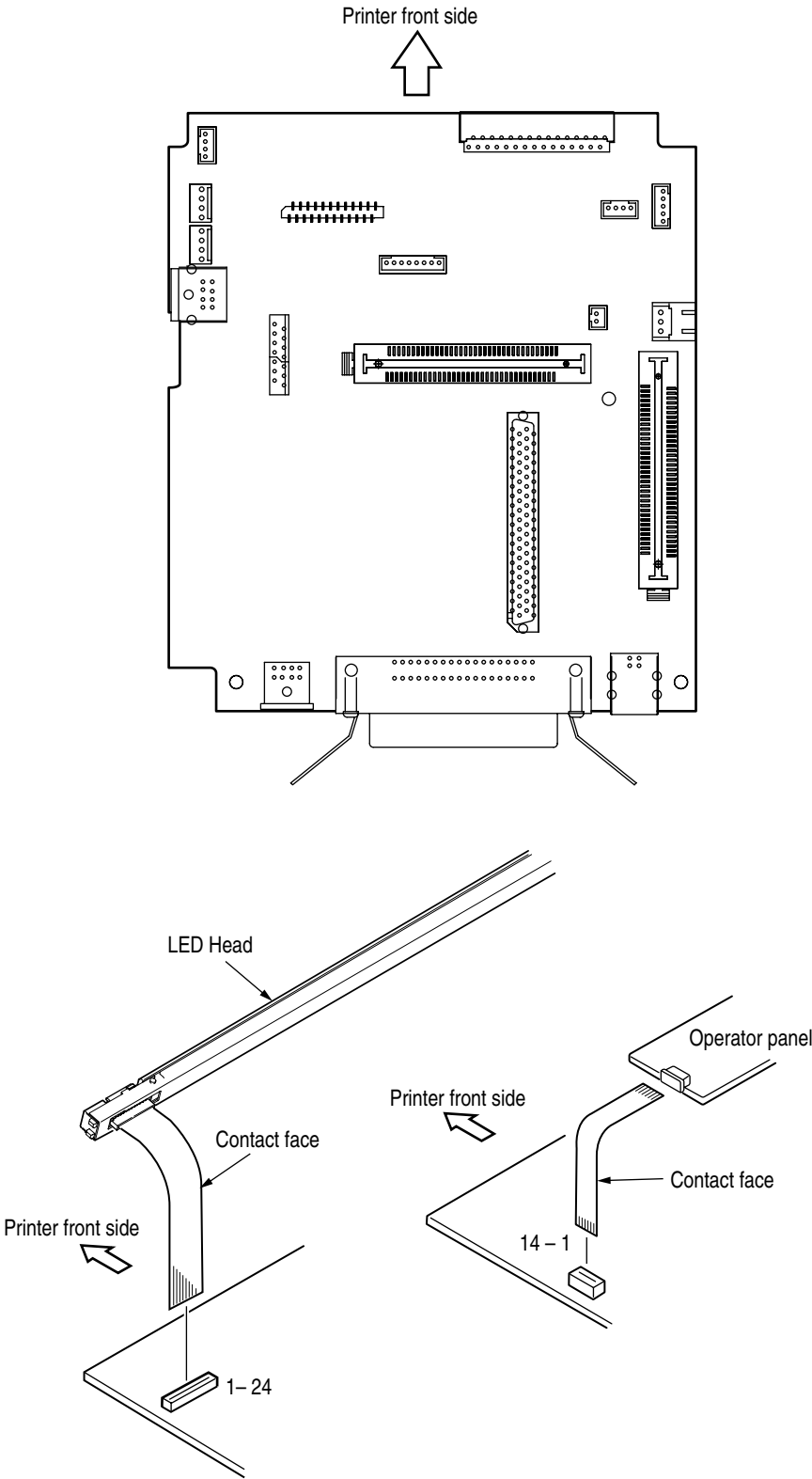
6. WIRING DIAGRAM

6.1 Interconnect Signal Diagram

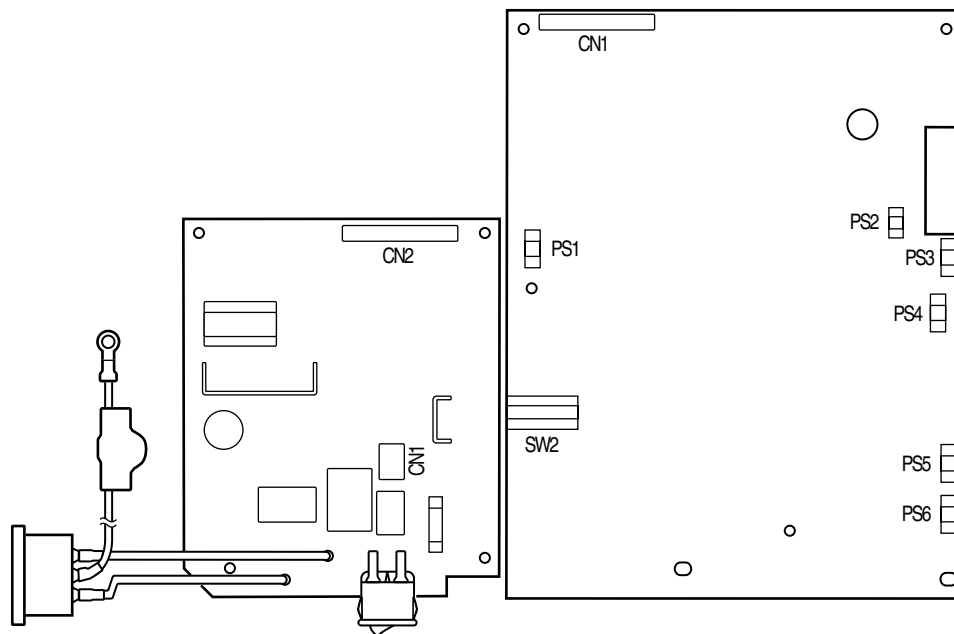


6.2 PCB Layout and Connector Signal List

(1) Main Control Board (GRV-2 PCB or GRR-2 PCB)



(2) Power Supply Board/High Voltage and Sensor Board



- HEAD Connector Pin Assignment
(To LED head)

		PIN NO.	I/O*	Signal	Function
1		1	C	SG	Ground for Logic
	2	2	O	HDCLK-P	Clock
3		3	C	HDCLK-N	Clock
	4	4	C	SG	Ground for Logic
5		5	O	HDLD	Load
	6	6	O	HDSTB1	Hsync/CSN
7		7	O	HDDATA3	Data 3
	8	8	O	HDDATA2	Data 2
9		9	O	HDDATA1	Data 1
	10	10	O	HDDATA0	Data 0
11		11	O	HDSTB0	Strobe/SI
	12	12	O	HDSTB3	SCLK
13		13	O	HDSTB2	SO
	14	14	O	+3.3V	+3.3V for Logic
15		15	C	0VPHD	Ground for LED
	16	16	O	HEAD	+5V for LED
17		17	C	0VPHD	Ground for LED
	18	18	O	HEAD	+5V for LED
19		19	C	0VPHD	Ground for LED
	20	20	O	HEAD	+5V for LED
21		21	C	0VPHD	Ground for LED
	22	22	O	HEAD	+5V for LED
23		23	C	0VPHD	Ground for LED
	24	24	O	HEAD	+5V for LED

* O: Out
C: Common

- LCDPNL Connector Pin Assignment
(To Operator Panel)

		PIN NO.	I/O*	Signal	Function
1		1	O	+5V	+5V
	2	2	O	LED-P	LED ON
3		3	I	SW-DATA1	Switch Data 1
	4	4	I	SW-DATA0	Switch Data 0
5		5	O	LCD_D3	LCD Data 3
	6	6	C	SG	Ground
7		7	O	LCD_D2	LCD Data 2
	8	8	O	LCD_D1	LCD Data 1
9		9	O	LCD_D0	LCD Data 0
	10	10	O	LCD_IRN	LCD Register Select
11		11	O	LCD_WRN	LCD Write/Read
	12	12	O	LCD_E	LCD Enable
13		13	I	SW-DATA2	Switch Data 2
	14	14	I	SW-DATA3	Switch Data 3

* I: In
O: Out
C: Common

- ENVELOPE Connector Pin Assignment
(To Multi Purpose Feeder)

		PIN NO.	I/O*	Signal	Function
5	8	1	O	OPPAP-N	Paper Sensor 1
2	7	2	O	OPSCK-N	Clock
1	4	3	O	OPSD-N	Data
3	6	4	I	OPSDP-N	OPT send data
		5	C	OVP	Analog Ground
		6	O	+38V	+38V
		7	C	SG	Logic Ground
		8	O	+5VA	+5V

* I: In
O: Out
C: Common

- 2NDTRAY Connector Pin Assignment
(To 2nd Tray)

5	8
2	7
1	4
3	6

PIN NO.	I/O*	Signal	Function
1	O	OPPAP-N	Paper Sensor 1
2	O	OPSCK-N	Clock
3	O	OPSD-N	Data
4	I	OPSDP-N	OPT send data
5	C	OVP	Analog Ground
6	O	+38V	+38V
7	C	SG	Logic Ground
8	O	+5VA	+5V

* I: In
O: Out
C: Common

- HVIF Connector Pin Assignment
(To High Voltage Unit/Sensor Board)

		PIN NO.	I/O*	Signal	Function
1		1	I	WRSNS-N	Write Sensor
	2	2	I	IN1SNS-N	Paper Sensor 1
3		3	I	TONER-N	Toner Sensor
	4	4	I	IN2SNS-N	Paper Sensor 2
5		5	I	PAPER-N	Paper Out Sensor
	6	6	C	SG	Ground
7		7	O	SBPWN-P	SB2 Output
	8	8	O	CB2PWN-P	CB2 Output
9		9	O	DB1PWM	DB1 Output
	10	10	C	SG	Ground
11		11	O	CB1PWM	Cb1 Output
	12	12	C	SG	Ground
13		13	I	TR1_FB	TR1 Current Feedback
	14	14	I	TRV_FB	TR1 Voltage Feedback
15		15	I	DB2_V_FB	DB2 Voltage Feedback
	16	16	I	CHI	CH Current Feedback
17		17	I	CH_V_FB	CH Voltage Feedback
	18	18	I	DB_I	DB Current Feedback
19		19	I	SB_V_FB	SB2 Voltage Feedback
	20	20	C	SG	Ground
21		21	O	CHPWM-P	CH Output Control
	22	22	O	DB2PWM	DB2 Output
23		23	O	TR2PWM-P	TR2 output
	24	24	O	TR1PWM-P	TR1 Output Control
25		25	O	+5V	+5V
	26	26	O	+5V	+5V
27		27	C	SG	Ground
	28	28	C	SG	Ground
29		29	I	OUTSNS-N	Out Sensor
	30	30	I	CVOPN-N	Cover Open

* I: In
O: Out
C: Common

- PW_1 Connector Pin Assignment
(To Power Supply Unit)

	PIN NO.	I/O*	Signal	Function
1	1	I	+38V	+38V
2	2	I	+38V	+38V
3	3	C	0VP	Analog Ground
4	4	C	0VP	Analog Ground
5	5	I	0VPHD	Ground for LED
6	6	I	0VPHD	Ground for LED
7	7	I	HEAD	+5V for LED
8	8	I	HEAD	+5V for LED

* I: In
O: Out
C: Common

- PW_2 Connector Pin Assignment
(To Power Supply Unit)

	PIN NO.	I/O*	Signal	Function
1	1	C	SG	Ground for Logic
2	2	C	SG	Ground for Logic
3	3	I	+5V	+5V for Logic
4	4	I	+5V	+5V for Logic
5	5	O	HEATON_N	Heater On

* I: In
O: Out
C: Common

- THERM Connector Pin Assignment
(To Thermistor)

	PIN NO.	I/O*	Signal	Function
1	1	O	+5V	+5V
2	2	I	THERM	Heater

* I: In
O: Out

- OPTION Connector Pin Assignment
(To Option Board [Network or RS232C])

			Pin No.	I/O*	Signal	Function	Pin No.	I/O*	Signal	Function
41		01	01	C	SG	Ground	41	C	SG	Ground
	42	02	02	C	SG	Ground	42	C	SG	Ground
43		03	03	O	PPGNT0-N	Bus Grant (PCI)	43	I/O	PPPERR-N	Parity Error (PCI)
	44	04	04	I/O	PPDVSL-N	Device select (PCI)	44	I/O	PPSEERR-N	System Error (PCI)
45		05	05	I/O	PPTRDY-N	Target Ready (PCI)	45	I/O	PPSTOP-N	Stop (PCI)
	46	06	06	I/O	PPFRM-N	Frame (PCI)	46	I/O	PPIRDY-N	Initiator Ready
47		07	07		NC	N.C.	47	I/O	PPPAR	Parity (PCI)
	48	08	08		NC	N.C.	48		NC	N.C.
49		09	09		NC	N.C.	49		NC	N.C.
	50	10	10	O	OPSCC_RXD	RXD (RS232C)	50	I	OPSCC_TXD	TXD (RS232C)
51		11	11	O	OPSCC_DSR	DSR (RS232C)	51	I	OPSCC_DTR	DTR (RS232C)
	52	12	12	I/O	PPC_BE3	Command/Byte Enable 3 (PCI)	52	O	PPCLK0	Clock (PCI)
53		13	13	I/O	PPC_BE1	Command/Byte Enable 1 (PCI)	53	I/O	PPC_BE2	Command/Byte Enable 2 (PCI)
	54	14	14	I	PRINT0-N	Interrupt (PCI)	54	I/O	PPC_BE0	Command/Byte Enable 0 (PCI)
55		15	15	O	PERIWR-N	FlashROM Write Enable	55	I	PPREQ0-N	Bus Request (PCI)
	56	16	16	O	NICFROM_CS	FlashROM Chip Select	56	O	PERIRD-N	FlashROM Read Enable
57		17	17	I/O	SDT22	AD Bus 22	57	I/O	SDT23	AD Bus 23
	58	18	18	I/O	SDT20	AD Bus 20	58	I/O	SDT21	AD Bus 21
59		19	19	C	SG	Ground	59	C	SG	Ground
	60	20	20	C	SG	Ground	60	C	SG	Ground
61		21	21	I/O	SDT18	AD Bus 18	61	I/O	SDT19	AD Bus 19
	62	22	22	I/O	SDT16	AD Bus 16	62	I/O	SDT17	AD Bus 17
63		23	23	I/O	SDT25	AD Bus 25	63	I/O	SDT24	AD Bus 24
	64	24	24	I/O	SDT27	AD Bus 27	64	I/O	SDT26	AD Bus 26
65		25	25	I/O	SDT29	AD Bus 29	65	I/O	SDT28	AD Bus 28
	66	26	26	I/O	SDT31	AD Bus 31	66	I/O	SDT30	AD Bus 30
67		27	27	I/O	SDT9	AD Bus 9	67	I/O	SDT8	AD Bus 8
	68	28	28	I/O	SDT11	AD Bus 11	68	I/O	SDT10	AD Bus 10
69		29	29	I/O	SDT13	AD Bus 13	69	I/O	SDT12	AD Bus 12
	70	30	30	I/O	SDT15	AD Bus 15	70	I/O	SDT14	AD Bus 14
71		31	31	I/O	SDT6	AD Bus 6	71	I/O	SDT7	AD Bus 7
	72	32	32	I/O	SDT4	AD Bus 4	72	I/O	SDT5	AD Bus 5
73		33	33	I/O	SDT2	AD Bus 2	73	I/O	SDT6	AD Bus 3
	74	34	34	I/O	SDT0	AD Bus 0	74	I/O	SDT1	AD Bus 1
75		35	35	I	OPNIC-N	NIC Detect	75	I	OPNICSW-N	NIC Push Switch
	76	36	36	O	RESET-N	Reset	76	I	OPSCC-N	RS232C Detect
77		37	37		NC	N.C.	77	C	SG	Ground
	78	38	38	C	SG	Ground	78	C	SG	Ground
79		39	39	C	SG	Ground	79	O	+5V	+5V
	80	40	40	O	+5V	+5V	80	O	+5V	+5V

* O : Out
I : In
C : Common

- FAN Connector Pin Assignment
(To Fan)

	PIN NO.	I/O*	Signal	Function
1	1	O	FANPOW	Power Supply for Fan driving
2	2	C	SG	Ground
3	3	I	FANALM-P	Fan Alarm

* I: In
O: Out
C: Common

- USB Connector Pin Assignment
(USB I/F)

1	3	PIN NO.	I/O*	Signal	Description
2	4	1	I	VCC	VCC
		2	I/O	D-	D-
		3	I/O	D+	D+
		4	C	SG	Ground

* I: In
O: Out
C: Common

- CENT Connector Pin Assignment
(IEEE1284 I/F)

		Pin No.	I/O*	Signal	Function	Pin No.	I/O*	Signal	Function
1	19	1	I	STB-N	Strobe	19	C	SG	Logic Ground
2	20	2	C	DATA0-P	Data0	20	C	SG	Logic Ground
3	21	3	C	DATA1-P	Data1	21	C	SG	Logic Ground
4	22	4	C	DATA2-P	Data2	22	C	SG	Logic Ground
5	23	5	C	DATA3-P	Data3	23	C	SG	Logic Ground
6	24	6	C	DATA4-P	Data4	24	C	SG	Logic Ground
7	25	7	C	DATA5-P	Data5	25	C	SG	Logic Ground
8	26	8	C	DATA6-P	Data6	26	C	SG	Logic Ground
9	27	9	C	DATA7-P	Data7	27	C	SG	Logic Ground
10	28	10	O	ACK-N	Acknowledge	28	C	SG	Logic Ground
11	29	11	O	BUSY-P	Busy	29	C	SG	Logic Ground
12	30	12	O	PE-P	Paper End	30	C	SG	Logic Ground
13	31	13	O	SEL-P	Select	31	I	IPRIM-N	Iprime
14	32	14	I	AUTOFEED-N	Auto Feed	32	O	FAULT-N	Fault
15	33	15		NC	N.C.	33	C	SG	Logic Ground
16	34	16	C	SG	Logic Ground	34		NC	N.C.
17	35	17	C	FG	Frame Ground	35	O	HILEVEL	High Level
18	36	18	O	5VA	+5V	36	I	SELIN-N	Select In

* O : Out
I : In
C : Common

- HM Connector Pin Assignment
(To Hopping Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	HMPH1-P	Coil 1-P
2	2	O	HMPH1-N	Coil 1-N
3	3	O	HMPH2-P	Coil 2-P
4	4	O	HMPH2-N	Coil 2-N

* O: Out

- RM Connector Pin Assignment
(To Resistration Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	RMPH1-P	Coil 1-P
2	2	O	RMPH1-N	Coil 1-N
3	3	O	RMPH2-P	Coil 2-P
4	4	O	RMPH2-N	Coil 2-N

* O: Out

- DM Connector Pin Assignment
(To Main Motor)

	PIN NO.	I/O*	Signal	Function
1	1	O	DMPH1-P	Coil 1-P
2	2	O	DMPH1-N	Coil 1-N
3	3	O	DMPH2-P	Coil 2-P
4	4	O	DMPH2-N	Coil 2-N

* O: Out

- ROM_DIMM Connector Pin Assignment

	Pin No.	I/O*	Signal	Function
01	01	C	SG	Ground
02	02		NC	N.C.
03	03		NC	N.C.
04	04		NC	N.C.
05	05		NC	N.C.
06	06		NC	N.C.
07	07		NC	N.C.
08	08		NC	N.C.
09	09		NC	N.C.
10	10	O	+3.3V	+3.3V
11	11		NC	N.C.
12	12		NC	N.C.
13	13		NC	N.C.
14	14		NC	N.C.
15	15	C	SG	Ground
16	16	C	SG	Ground
17	17		NC	N.C.
18	18		NC	N.C.
19	19		NC	N.C.
20	20		NC	N.C.
21	21	I/O	DBUS11	Data Bus 11
22	22	I/O	DBUS4	Data Bus 4
23	23	I/O	DBUS3	Data Bus 3
24	24	I/O	DBUS12	Data Bus 12
25	25	I/O	DBUS10	Data Bus 10
26	26	I/O	DBUS5	Data Bus 5
27	27	C	SG	Ground
28	28	C	SG	Ground
29	29	I/O	DBUS2	Data Bus 2
30	30	O	+3.3V	+3.3v
31	31	I/O	DBUS9	Data Bus 9
32	32	I/O	DBUS13	Data Bus 13
33	33	I/O	DBUS1	Data Bus 1
34	34	I/O	DBUS6	Data Bus 6
35	35	I/O	DBUS8	Data Bus 8
36	36	I/O	DBUS14	Data Bus 14

	Pin No.	I/O*	Signal	Function
37	37	I/O	DBUS0	Data Bus 0
38	38	I/O	DBUS7	Data Bus 7
39	39	C	SG	Ground
40	40	C	SG	Ground
41	41	O	WBEN0	Write Enable
42	42	I/O	DBUS15	Data Bus 15
43	43	O	CPU_CS3-N	Chip select 3
44	44	O	CPU_OE-N	Output Enable
45	45	O	ABUS14	Address Bus 14
46	46	O	CPU_CS2-N	Chip select 2
47	47	O	ABUS15	Address Bus 15
48	48	O	ABUS30	Address Bus 30
49	49	O	ABUS16	Address Bus 16
50	50	O	ABUS29	Address Bus 29
51	51	O	ABUS17	Address Bus 17
52	52	O	ABUS28	Address Bus 28
53	53	O	ABUS18	Address Bus 18
54	54	O	ABUS27	Address Bus 27
55	55	O	ABUS19	Address Bus 19
56	56	O	ABUS26	Address Bus 26
57	57	O	ABUS20	Address Bus 20
58	58	O	ABUS25	Address Bus 25
59	59	O	ABUS21	Address Bus 21
60	60	O	ABUS24	Address Bus 24
61	61	O	+3.3V	+3.3v
62	62	O	ABUS23	Address Bus 23
63	63	O	ABUS22	Address Bus 22
64	64	O	ABUS13	Address Bus 13
65	65	O	ABUS11	Address Bus 11
66	66	O	ABUS12	Address Bus 12
67	67	O	ABUS10	Address Bus 10
68	68	O	ABUS9	Address Bus 9
69	69	O	ABUS8	Address Bus 8
70	70	O	ABUS7	Address Bus 7
71	71	O	RESET-N	Reset
72	72	C	SG	Ground

* O : Out
 I : In
 C : Common

- RAM_DIMM Connector Pin Assignment

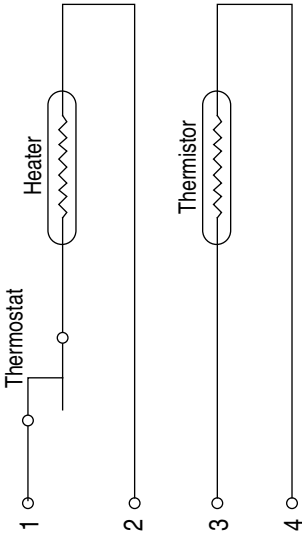
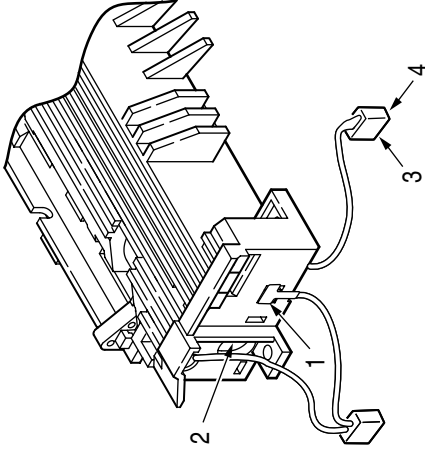
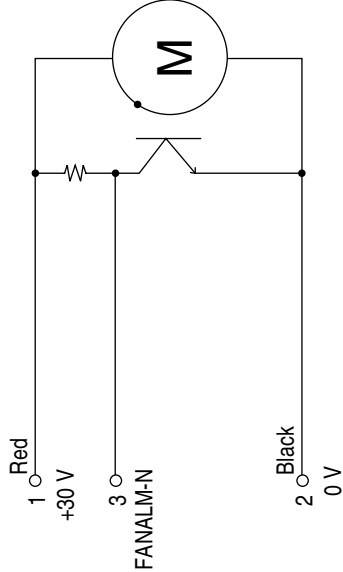
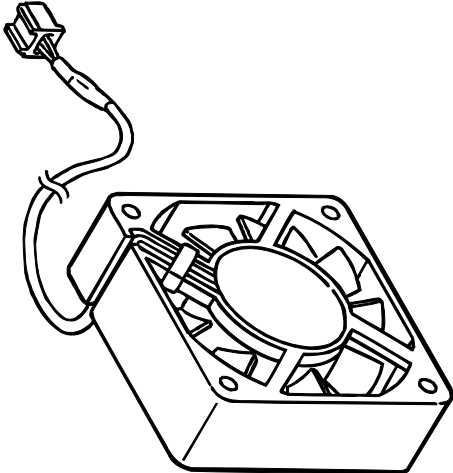
	Pin No.	I/O*	Signal	Function
01	01	C	SG	Ground
02	02		NC	N.C.
03	03		NC	N.C.
04	04		NC	N.C.
05	05		NC	N.C.
06	06		NC	N.C.
07	07		NC	N.C.
08	08		NC	N.C.
09	09		NC	N.C.
10	10	O	+3.3V	+3.3V
11	11		NC	N.C.
12	12		NC	N.C.
13	13		NC	N.C.
14	14		NC	N.C.
15	15	C	SG	Ground
16	16	C	SG	Ground
17	17		NC	N.C.
18	18		NC	N.C.
19	19		PERIRD-N	N.C.
20	20		NC	N.C.
21	21		NC	N.C.
22	22	O	RAM_CS2-N	Chip select 2
23	23		NC	N.C.
24	24	O	SAD3	Address Bus 3
25	25	O	RAM_CLK1	Clock
26	26	O	SAD2	Address Bus 2
27	27	C	SG	Ground
28	28	C	SG	Ground
29	29	O	SAD4	Address Bus 4
30	30	O	+3.3V	+3.3v
31	31	O	SAD5	Address Bus 5
32	32	O	SAD1	Address Bus 1
33	33	O	SAD6	Address Bus 6
34	34	O	SAD0	Address Bus 0
35	35	O	SAD7	Address Bus 7
36	36	O	SAD10	Address Bus 10

	Pin No.	I/O*	Signal	Function
37	37	O	SAD8	Address Bus 8
38	38	O	SAD13	Address Bus 13
39	39	C	SG	Ground
40	40	C	SG	Ground
41	41	O	SAD9	Address Bus 9
42	42	O	SAD12	Address Bus 12
43	43	O	SAD11	Address Bus 11
44	44	O	RAM_CS1-N	Chip select 1
45	45		PERIWR-N	Address Bus 14
46	46	O	RAM_RAS-N	Row Address
47	47	O	RAM_CKE-N	Clock Enable
48	48	C	SG	Ground
49	49	O	RAM_CLK1	Clock
50	50	O	RAM_CAS-N	Column Address Strobe
51	51	O	RAM_DQM1	Byte Enable 1
52	52	O	RAM_WE-N	Write Enable
53	53	I/O	SDT8	Data Bus 8
54	54	O	RAM_DQM0	Write Enable 0
55	55	I/O	SDT9	Data Bus 9
56	56	I/O	SDT7	Data Bus 7
57	57	I/O	SDT10	Data Bus 10
58	58	I/O	SDT6	Data Bus 6
59	59	I/O	SDT11	Data Bus 11
60	60	I/O	SDT5	Data Bus 5
61	61	O	+3.3V	+3.3v
62	62	I/O	SDT4	Data Bus 4
63	63	I/O	SDT12	Data Bus 12
64	64	I/O	SDT3	Data Bus 3
65	65	I/O	SDT13	Data Bus 13
66	66	I/O	SDT2	Data Bus 2
67	67	I/O	SDT14	Data Bus 14
68	68	I/O	SDT1	Data Bus 1
69	69	I/O	SDT15	Data Bus 15
70	70	I/O	SDT0	Data Bus 0
71	71	I	OPRAM-N	RAM-DIMM Detect
72	72	C	SG	Ground

* O : Out
 I : In
 C : Common

6.3 Resistance Check

Unit	Circuit Diagram	Illustration	Resistance
Registration motor	<p>1 ○ Orange 2 ○ Yellow 3 ○ Brown 4 ○ Black</p>	<p>Yellow</p>	Between Pins 1 and 2: 7.9Ω Between Pins 3 and 4: 7.9Ω
Main/drum motor	<p>1 ○ Orange 2 ○ Yellow 3 ○ Brown 4 ○ Black</p>	<p>White</p>	Between Pins 1 and 2: 8.6Ω Between Pins 3 and 4: 8.6Ω
Hopping motor	<p>1 ○ Orange 2 ○ Yellow 3 ○ Brown 4 ○ Black</p>	<p>White</p>	Between Pins 1 and 2: 10.3Ω Between Pins 3 and 4: 10.3Ω

Unit	Circuit Diagram	Illustration	Resistance
Fusing unit	 <p>The diagram shows two parallel circuits. The first circuit is between pins 1 and 2, containing a thermostat switch in series with a heater. The second circuit is between pins 3 and 4, containing a thermistor.</p>	 <p>The illustration shows a rectangular component with a series of fins. Four pins are labeled: pin 1 is at the bottom left, pin 2 is at the bottom right, pin 3 is at the top right, and pin 4 is at the top left.</p>	Between Pins 1 and 2: 120V 2Ω 240V 7Ω Between Pins 3 and 4: 200KΩ (at room temperature)
Fan	 <p>The diagram shows a motor (M) connected to a transistor circuit. Pin 1 (Red, +30 V) is connected to the base of the transistor through a resistor. Pin 3 (FANALM-N) is connected to the emitter. Pin 2 (Black, 0 V) is connected to the collector and one terminal of the motor. The other terminal of the motor is connected to the +30 V supply.</p>	 <p>The illustration shows a square fan unit with a circular fan blade in the center. A cable with a connector is attached to the top of the unit.</p>	

APPENDIX A RS-232C SERIAL INTERFACE (option)

1) Connector

- Printer side : 25-pin receptacle
Type DB-25S (made by Canon) or equivalent
- Cable side : 25-pin plug
Type DB-25S (made by Canon)
Shell
Type DB-C8-J10-F2-1 (made by Nihon Kouku Denshi) or equivalent

Note: Plug shall be fixable with a lock screw.

2) Cable

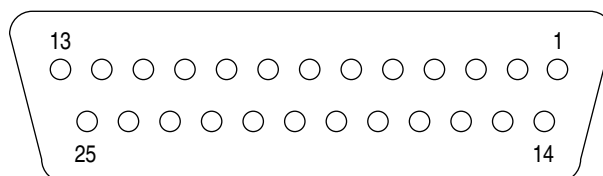
- Cable length : 6 ft (1.8 m) max. (cable shall be shielded)

Note: Cable is not provided.

3) Interface signal

Pin No.	Signal name	Abbreviation	Signal direction	Functions
1	Frame Ground	FG		Frame Ground
2	Transmitted Data	TD	← PR	Transmitted Data
3	Received Data	RD	→ PR	Received Data
4	Request to Send	RTS	← PR	Stay space level
5	-			(Not connected)
6	-			(Not connected)
7	Signal Ground	SG		Signal Ground
9 ~ 17	-			(Not connected)
18	-			(Not connected)
19	-			(Not connected)
20	Data Terminal Ready	DTR	← PR	Data terminal ready
21 ~ 25	-			(Not connected)

- Connector pin arrangement



(View from the cable side)

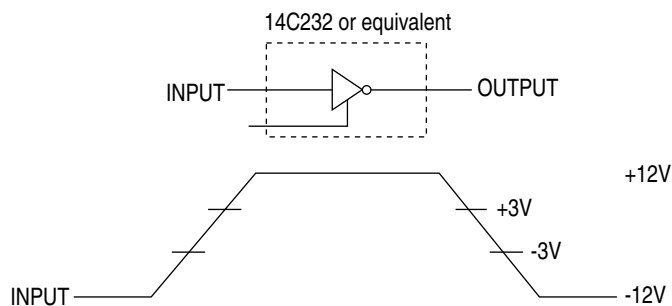
When the Ready/Busy protocol is used for the buffer busy control method, the busy signal can be set to Pin-20 (DTR) in the menu.

4) Signal Level

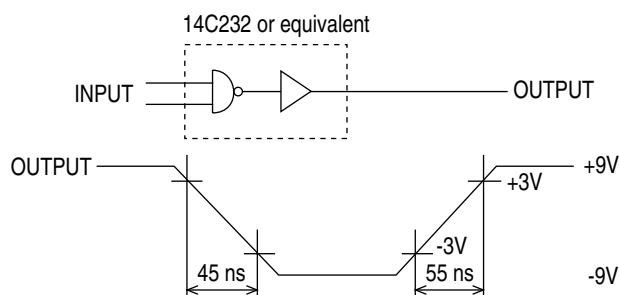
- MARK polarity : -3V to -15V (LOGIC = 1)
- SPACE polarity : +3V to +15V (LOGIC = 0)

5) Interface Circuit

a) Receiving Circuit



b) Sending Circuit



Note: The signal levels described above is for the case where $3K\ \Omega \times 15pF$ is connected to the terminal.

6) Receive Margin

37% min. at all reception rates.

7) Communications Protocol

- READY/BUSY protocol
- X-ON/X-OFF protocol

8) Interface Parameter Setting

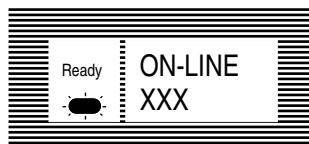
Press MENU key several times.

Press ITEM key to display the item on the LCD to set up.

Press VALUE key to display the value on the LCD to set up.

Press SELECT key, and display "*" mark on the right side of the value:

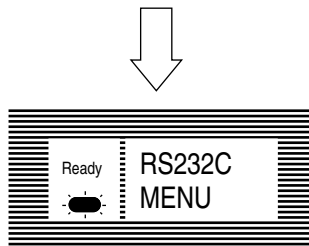
By pressing the ON LINE key, menu setting mode is completed and the printer returns to on-line state.



XXX : PCL, AUTO, PSE*, HEX DUMP, PRR or FX

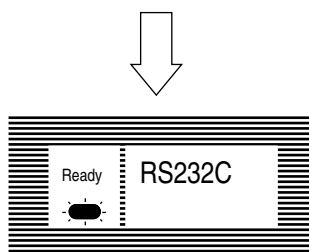
* PSE means POSTSCRIPT 3 EMULATION.

Press the MENU key 9 times.



"RS232C MENU" is displayed on the LCD.

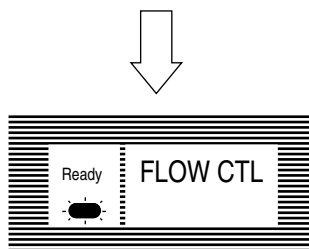
Press the SELECT key.



Item	RS232C I/F	
Contents of Display	Function	
ENABLE	ENABLE	
DISABLE	DISABLE	

Factory Setting: ENABLE

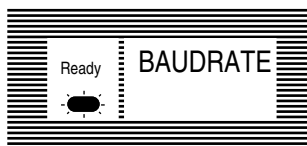
Press the ITEM + key.



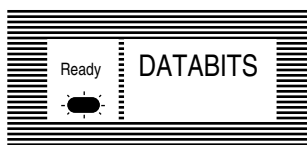
Item	Flow CTL	
Contents of Display	Function	
DTR HI	SPACE-READY	
DTR LO	MARK-READY	
XONXOFF		
RbstXON	Sending at intervals of 1 sec.	

Factory Setting: DTR HI

Press the ITEM + key.



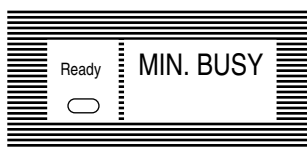
Press the ITEM + key.



Press the ITEM + key.



Press the ITEM + key.



Item	Baud Rate
Contents of Display	Function
300	300 baud
600	600 baud
1200	1200 baud
2400	2400 baud
4800	4800 baud
9600	9600 baud
19200	19200 baud
38400	38400 baud
57600	57600 baud
76800	76800 baud
115200	115200 baud

Factory Setting: 9600 baud

Item	Bit Length
Contents of Display	Function
8 BITS	8 bits
7 BITS	7 bits

Factory Setting: 8 bit

Item	Parity
Contents of Display	Function
NONE	No parity
EVEN	Even parity
ODD	Odd parity

Factory Setting: NONE

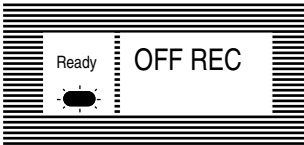
Item	Minimum BUSY Time
Contents of Display	Function
200 m SEC	200 ms
1 SEC	1 sec (1000 ms)

Factory Setting: 200 m SEC

(PCL only)



Press the ITEM + key.

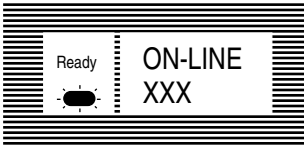


Item	RS232C I/F OFF-LINE RECEIVE
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE



Press the ON LINE key.



Setting completed.

XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX

APPENDIX B CENTRONICS PARALLEL INTERFACE

1) Connector

- Printer side : 36-pin receptacle
(single port) Type 57RE-40360-730B-D29A (made by Daiichi Denshi), CN-AX05841A36AT (made by Ougat) or equivalent
- Cable side : 36-pin plug
Type 57-30360 (made by Daiichi Denshi) or equivalent
Plug-552274-1 (AMP), 552073-1 (AMP) or equivalent

2) Cable

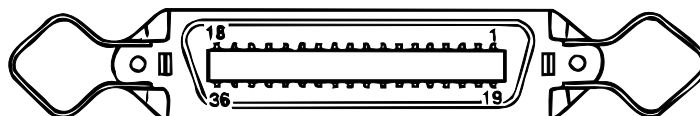
- Cable length : 6 ft (1.8 m) max.
(A Shielded cable composed of twisted pair wires is recommended for noise prevention.)

Note: Cable is not supplied with the printer, and is not available from Oki.

3) Table of Parallel I/F Signals

Pin No.	Signal name	Signal direction	Functions
1	DATA STROBE	→ PR	Parallel data sampling strobe
2	DATA BIT - 1		
3	DATA BIT - 2		
4	DATA BIT - 3		
5	DATA BIT - 4	→ PR	
6	DATA BIT - 5		
7	DATA BIT - 6		
8	DATA BIT - 7		
9	DATA BIT - 8		
10	ACKNOWLEDGE	← PR	Completion of data input or end of a function
11	BUSY	← PR	During print processing or alarm
12	PAPER END	← PR	End of paper
13	SELECT	← PR	Select state (ON-LINE)
14	AUTOFEED	→ PR	Request to change mode
15	-		(Not used)
16	0V		Signal ground
17	CHASSIS GROUND		Chassis ground
18	+5V	← PR	50 mA max.
19 ⋮ 30	0V		Signal ground
31	INPUT PRIME	→ PR	Initializing signal
32	FAULT	← PR	End of paper or during alarm
33	-		Signal ground
34	-		(Not used)
35	-		High level (3.3 kΩ)
36	SELECT IN	→ PR	Request to change mode

• Connector pin arrangement



4) Signal Level

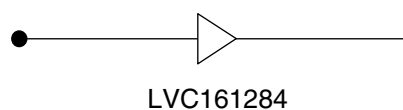
- INPUT
 - Low : 0 V to +0.4 V
 - High : +2.4 V to 5.0 V
- OUTPUT
 - Low : 0 V to +0.4 V
 - High : +2.0 V to 5.0 V

5) Specifications

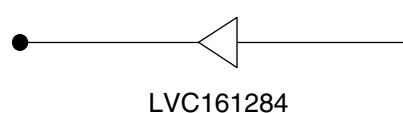
Item	Description
Mode	Compatibility mode, Nibble mode, ECP mode
Data bit length	8 bits (in the compatibility mode)
Input prime	Valid/Invalid
Receive buffer	0.1M, 0.2M, 0.5M Bytes
Control	Handshaking control is performed in each mode. Data received from the host is stored in the receive buffer. Busy control is performed. Signal lead control is performed.

6) Interface circuit

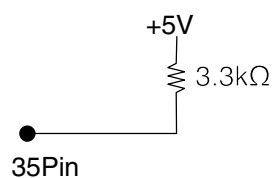
a) Receiving circuit



b) Sending circuit

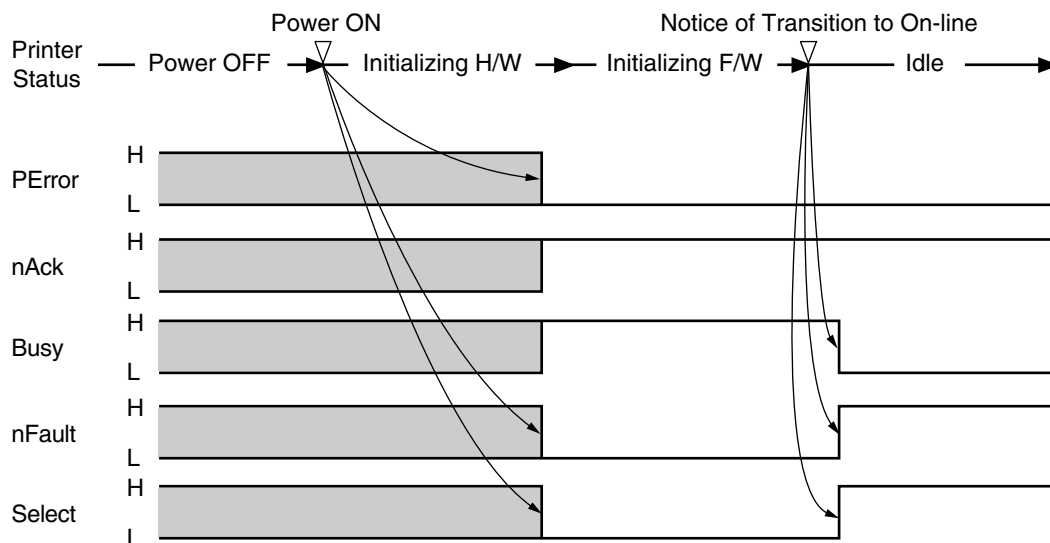


c) Other

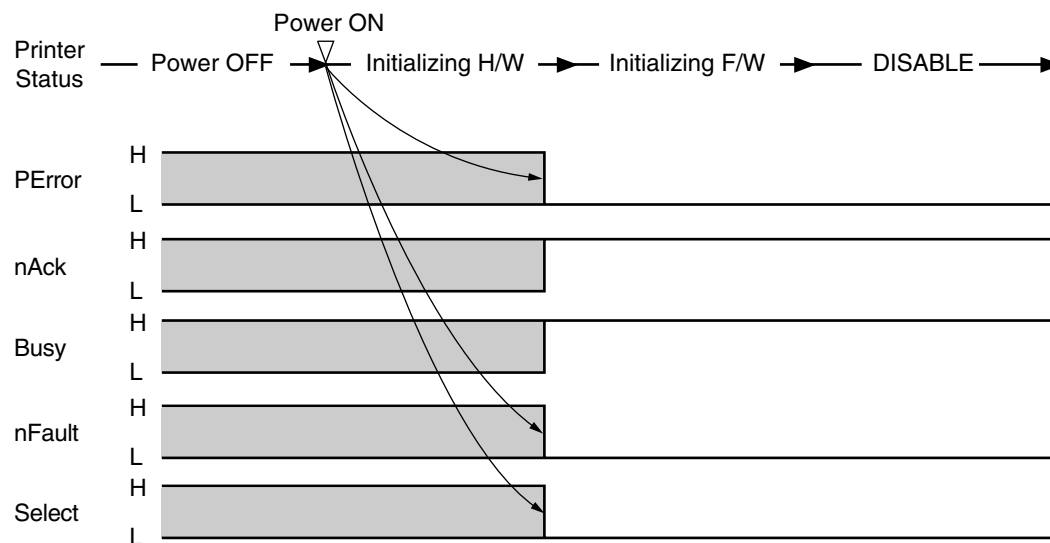


7) Timing charts

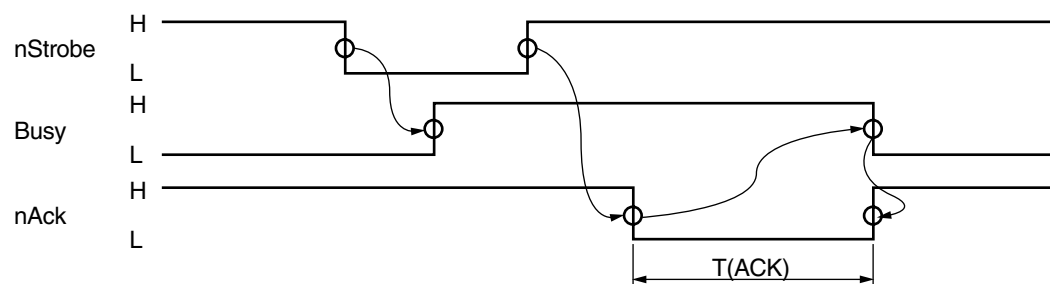
a) Power-ON (Menu Setting: PARALLEL=ENABLE)



b) Power-ON (Menu Setting: PARALLEL=DISABLE)

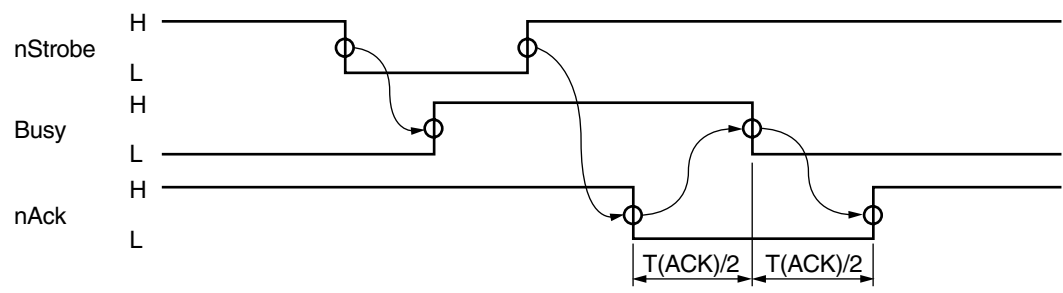


c) Data Reception (Menu Setting: Ack/Busy Timing=Ack in Busy)



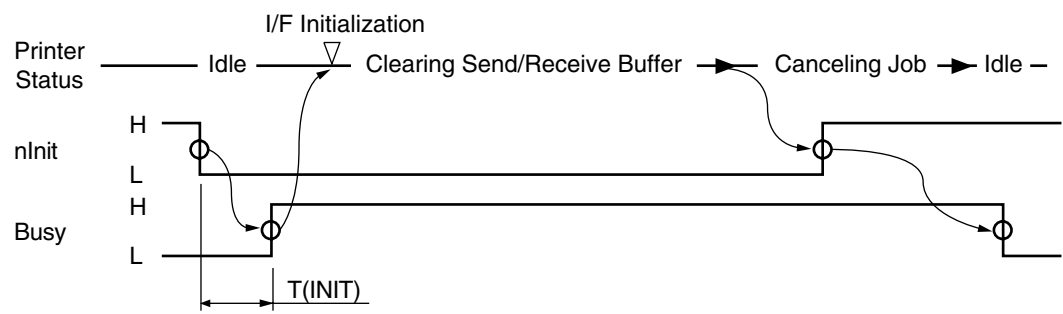
Menu Setting (Ack Width)	NARROW	MEDIUM	WIDE
T(ACK)	0.5μs	1.0μs	3.0μs

d) Data Reception (Menu Setting: Ack/Busy Timing=Ack while Busy)



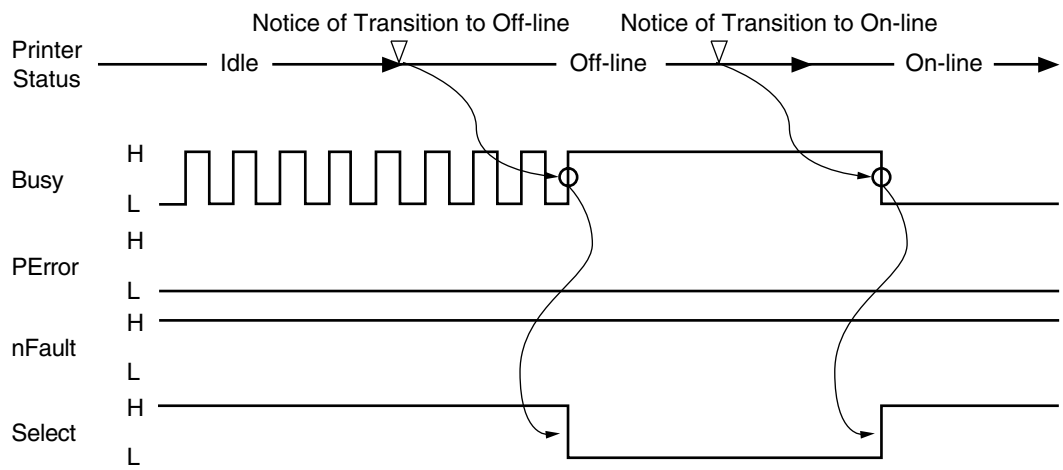
* The T (ACK) values are the same as those shown in the section c).

e) I-Prime (Not at menu-set I-PRIME=DISABLE)

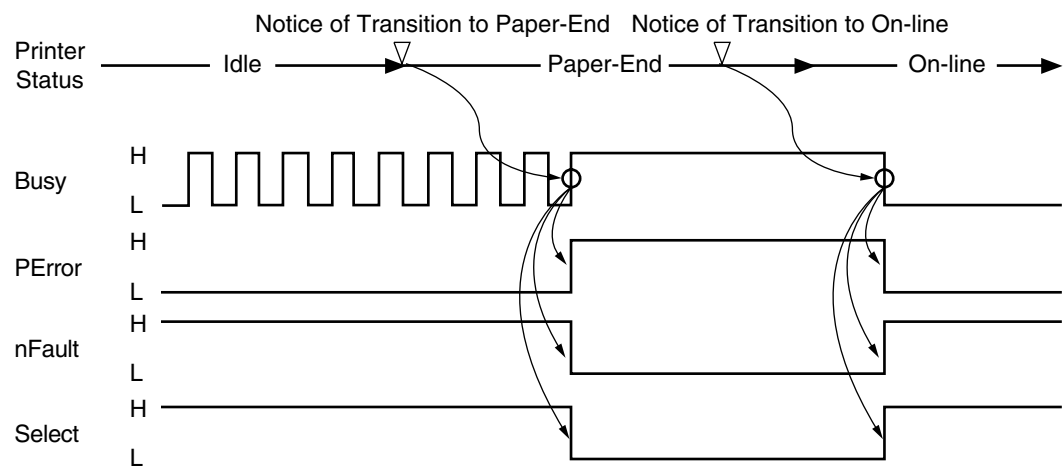


Menu Setting (I-PRIME)	3 MICRON SEC	50 MICRON SEC
T(INIT)	2.0μs	33.3μs

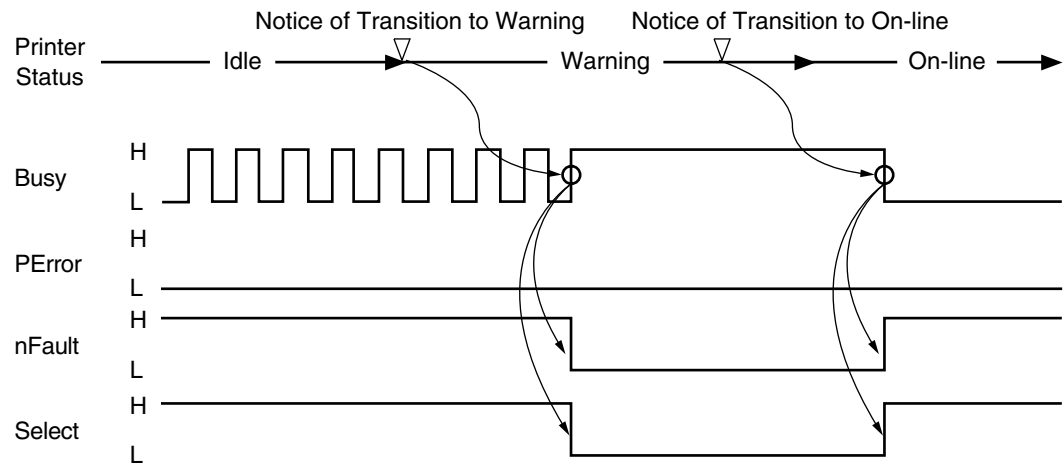
f) Off-line



g) Paper-End



h) Warning (Paper-end state is excluded)

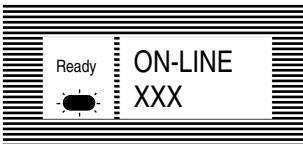


7) Interface Parameter Setting

The following settings are possible by pressing the SELECT key, after selecting the display contents of the LCD of the operator panel by using the ITEM+ and ITEM- keys.

Settings are retained even when the printer power is turned off.

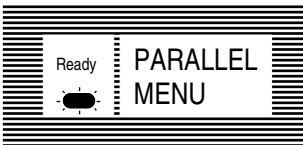
By pressing the ON LINE key, menu setting mode is completed and the printer returns to on-line state.



XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX



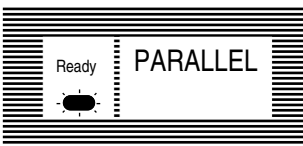
Press the MENU key 8 times.



"PARALLEL MENU" is displayed on the LCD.



Press the SELECT key.



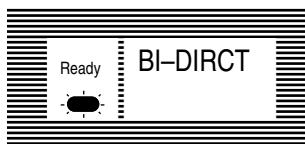
Item	PARALLEL I/F	
Contents of Display	Function	
ENABLE	ENABLE	
DISABLE	DISABLE	

Factory Setting: ENABLE



Press the ITEM + key.



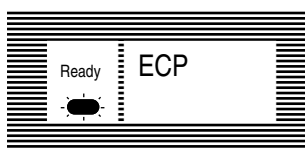


Item	Direction of Data Transfer	
Contents of Display	Function	
ENABLE	Bi-directional data transmission	
DISABLE	Uni-directional data transmission	

Factory Setting: ENABLE



Press the ITEM + key.

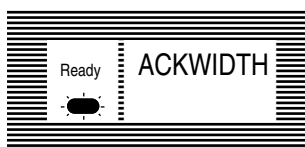


Item	ECP Mode	
Contents of Display	Function	
ENABLE	ENABLE	
DISABLE	DISABLE	

Factory Setting: ENABLE



Press the ITEM + key.

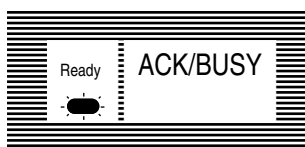


Item	ACK Width in compatible	
Contents of Display	Function	
NARROW	0.5μs	
MEDIUM	1.0μs	
WIDE	3.0μs	

Factory Setting: NARROW



Press the ITEM + key.



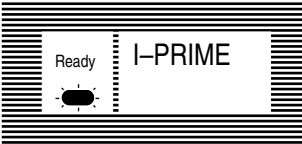
Item	Output order of BUSY and ACK signal	
Contents of Display	Function	
IN	ACK IN BUSY: BUSY=LOW→the end of ACK pulse	
WHILE	ACK WHILE BUSY: BUSY=LOW→Center of ACK pulse	

Factory Setting: IN



Press the ITEM + key.



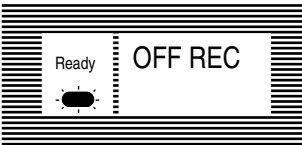


Item	I-PRIME
Contents of Display	Function
3μ SEC	Enabled with the 3μs nlnit signal
50μ SEC	Enabled with the 50μs nlnit signal
DISABLE	DISABLE

Factory Setting: DISABLE



Press the ITEM + key.

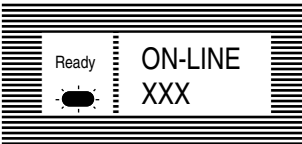


Item	PARALLEL I/F OFF-LINE RECEIVE
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: DISABLE



Press the ON LINE key.



Setting completed.

XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX

APPENDIX C Universal Serial Bus (USB)

Universal Serial Bus Specification Revision 2.0 full speed compliance.

1) Connector

- Printer Side : "B" Receptacle (Upstream Input to the USB Device)
- Cable Side : Series "B" Plug

2) Cable

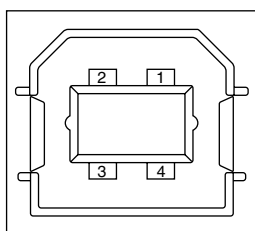
- Cable Length : Max 2m (A cable must be met USB Spec Rev 2.0 for normal operation)

Note: Cable is not provided.

3) Table of USB I / F signals

Contact Number	Signal Name
1	Vbus
2	D -
3	D +
4	GND
Shell	Shield

4) Connector pin arrangement



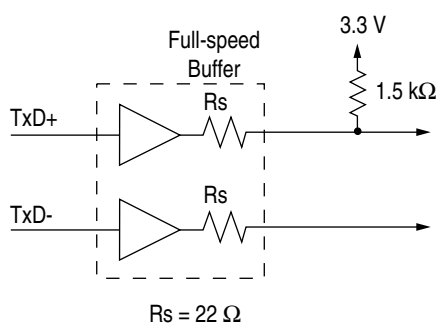
5) Mode & Class of Device

- Full - speed Driver
- Self - powered Device

6) Data Signaling Rate

- Full - speed function - 12Mb/s

7) Interface circuit



8) Signal Level

• Input / Output Level

Parameter	Symbol	Min.	Max.	Units
Input Levels :				
High (driven)	V _{IH}	2.0		V
High (floating)	V _{IHZ}	2.7	3.6	V
Low	V _{IL}		0.8	V
Output Levels :				
Low	OL	0.0	0.3	V
High (driven)	OH	2.8	3.6	V
Output Signal Crossover Voltage	VC _{RS}	1.3	2.0	V

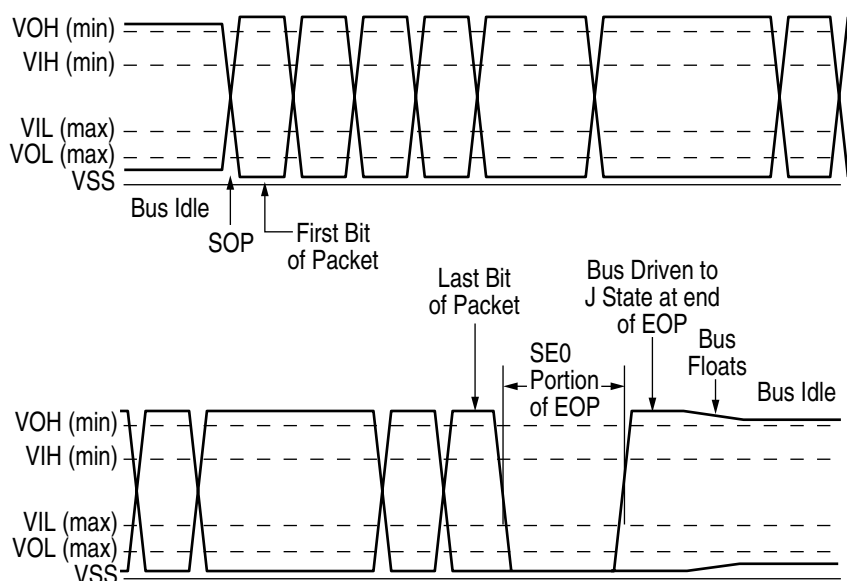
• Signaling Levels

Bus State	Signaling Levels	
	Required	Acceptable
Differential "1"	(D+) - (D-) > 200mV and D+ > V _{IH} (min)	(D+) - (D-) > 200mV
Differential "0"	(D-) - (D+) > 200mV and D- > V _{IH} (min)	(D-) - (D+) > 200mV
Single-ended 0 (SE0)	D+ and D- < V _{IL} (max)	D+ and D- < V _{IH} (min)
Data J state:		
Low-speed	Differential "0"	
Full-speed	Differential "1"	
Data K state:		
Low-speed	Differential "1"	
Full-speed	Differential "0"	
Idle state:		
Low-speed	D- > V _{IHZ} (min) and D+ < V _{IL} (max)	D- > V _{IHZ} (min) and D+ < V _{IH} (min)
Full-speed	D+ > V _{IHZ} (min) and D- < V _{IL} (max)	D+ > V _{IHZ} (min) and D- < V _{IH} (min)
Resume state	Data K state	
Start-of-Packet (SOP)	Data lines switch from Idle to K state	
End-of-Packet (EOP)	SE0 for ≥ 1 bit time ¹ followed by a J state for 1 bit time	SE0 for ≥ 1 bit time ¹ followed by a J state
Disconnect (at downstream port)	SE0 for ≥ 2.5μs	
Connect (at downstream port)	Idle for ≥ 2ms	Idle for ≥ 2.5μs
Reset	D+ and D- < V _{IL} (max) for ≥ 10ms	D+ and D- < V _{IL} (max) for ≥ 2.5μs

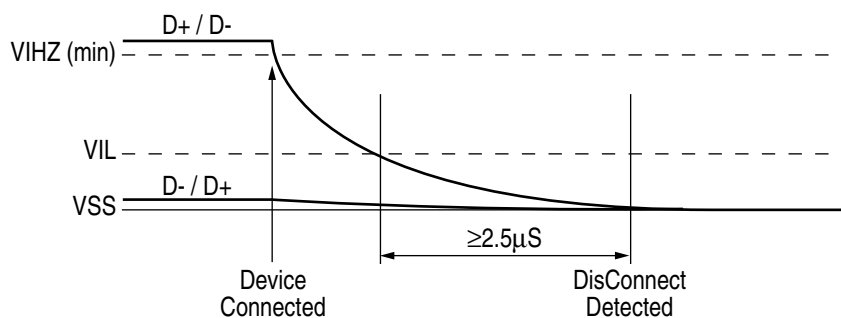
Note: The width of EOP is defined in bit times relative to the device type receiving the EOP. The bit time is approximate.

9) Timing Chart

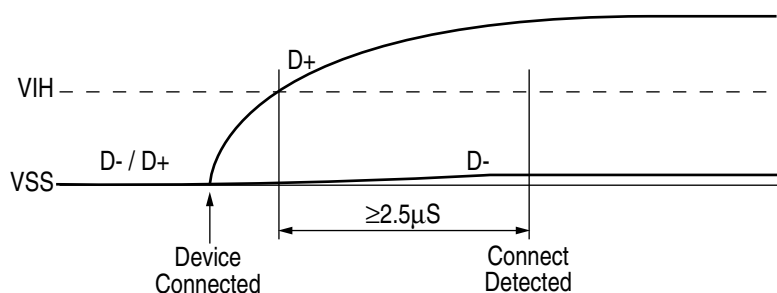
a) Packet Voltage Levels



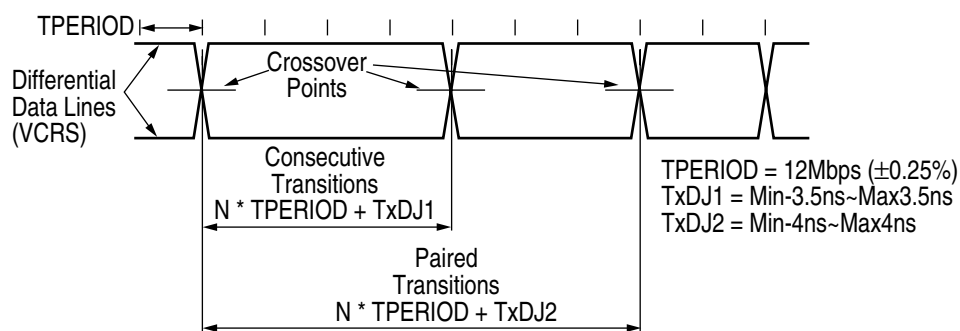
b) Disconnect Detection



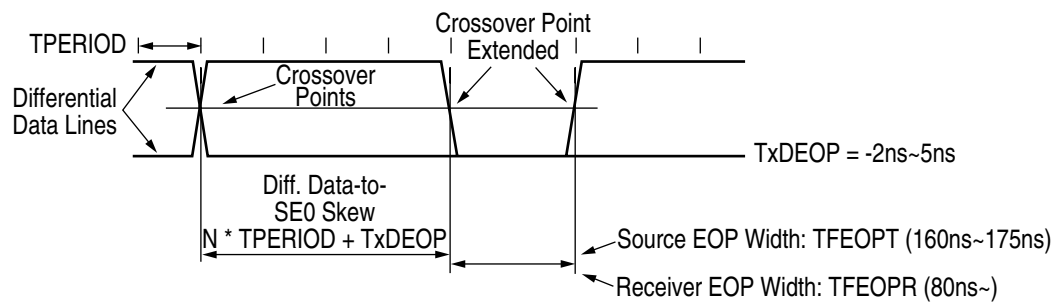
c) Full-speed Device Connect Detection



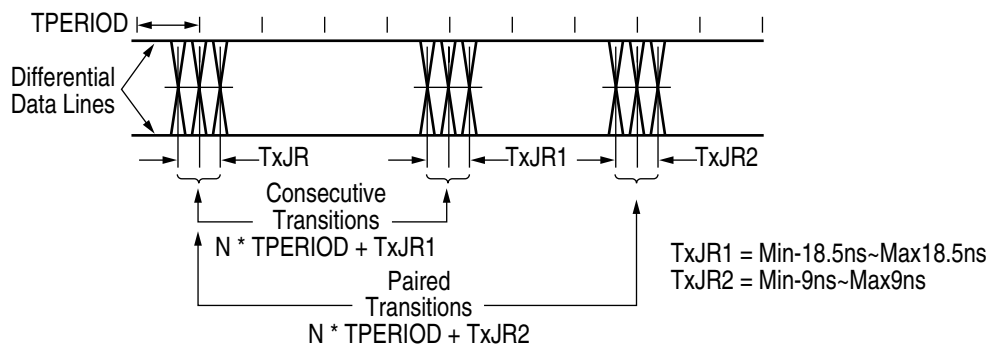
d) Differential Data Jitter



e) Differential-to-EOP Transition Skew and EOP Width



f) Receiver Jitter Tolerance



10) Interface Parameter Setting

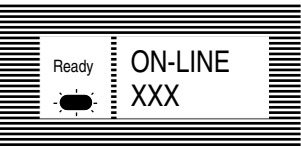
Press MENU key several times.

Press ITEM key to display the item on the LCD to set up.

Press VALUE key to display the value on the LCD to set up.

Press SELECT key, and display "*" mark on the right side of the value:

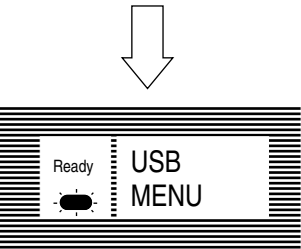
By pressing the ON LINE key, menu setting mode is completed and the printer returns to on-line state.



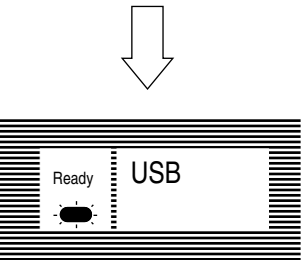
XXX : PCL, AUTO, PSE*, HEX DUMP, PRR or FX

* PSE means POSTSCRIPT3 EMULATION.

Press the MENU key 9 times.
(If RS232C is installed, press the MENU key 10 times.)



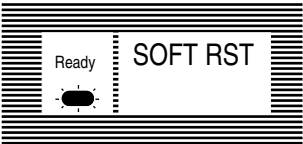
Press the ITEM + key.



Item	USB I/F
Contents of Display	Function
ENABLE	ENABLE
DISABLE	DISABLE

Factory Setting: ENABLE

Press the ITEM + key.

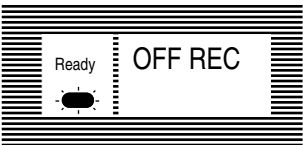


Item	Sets Soft Reset command	
Contents of Display	Function	
ENABLE	ENABLE	
DISABLE	DISABLE	

Factory Setting: DISABLE



Press the ITEM + key.

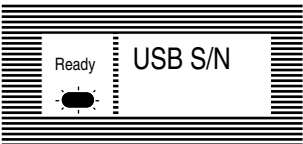


Item	USB I/F OFF-LINE RECEIVE	
Contents of Display	Function	
ENABLE	ENABLE	
DISABLE	DISABLE	

Factory Setting: DISABLE



Press the ITEM + key.

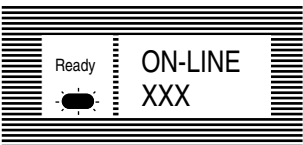


Item	USB Serial Number	
Contents of Display	Function	
ENABLE	ENABLE	
DISABLE	DISABLE	

Factory Setting: ENABLE



Press the ON LINE key.

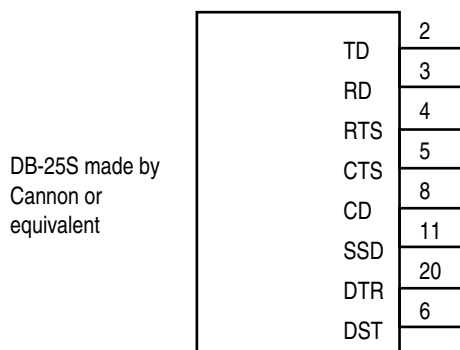


Setting completed.

XXX : PCL, AUTO, PSE, HEX DUMP, PRR or FX

APPENDIX D LOOP TEST (RS-232C INTERFACE)

- 1) Connect the test connector



Test Connector Connection Diagram

- 2) Select "LOOP Test" in the system maintenance mode.
The codes transmitted from the TD signals are comparatively checked with the data received from the RD signals. If any error occurs, the error message is displayed on the LCD.

APPENDIX E DIAGNOSTICS TEST

1. **Maintenance Modes**

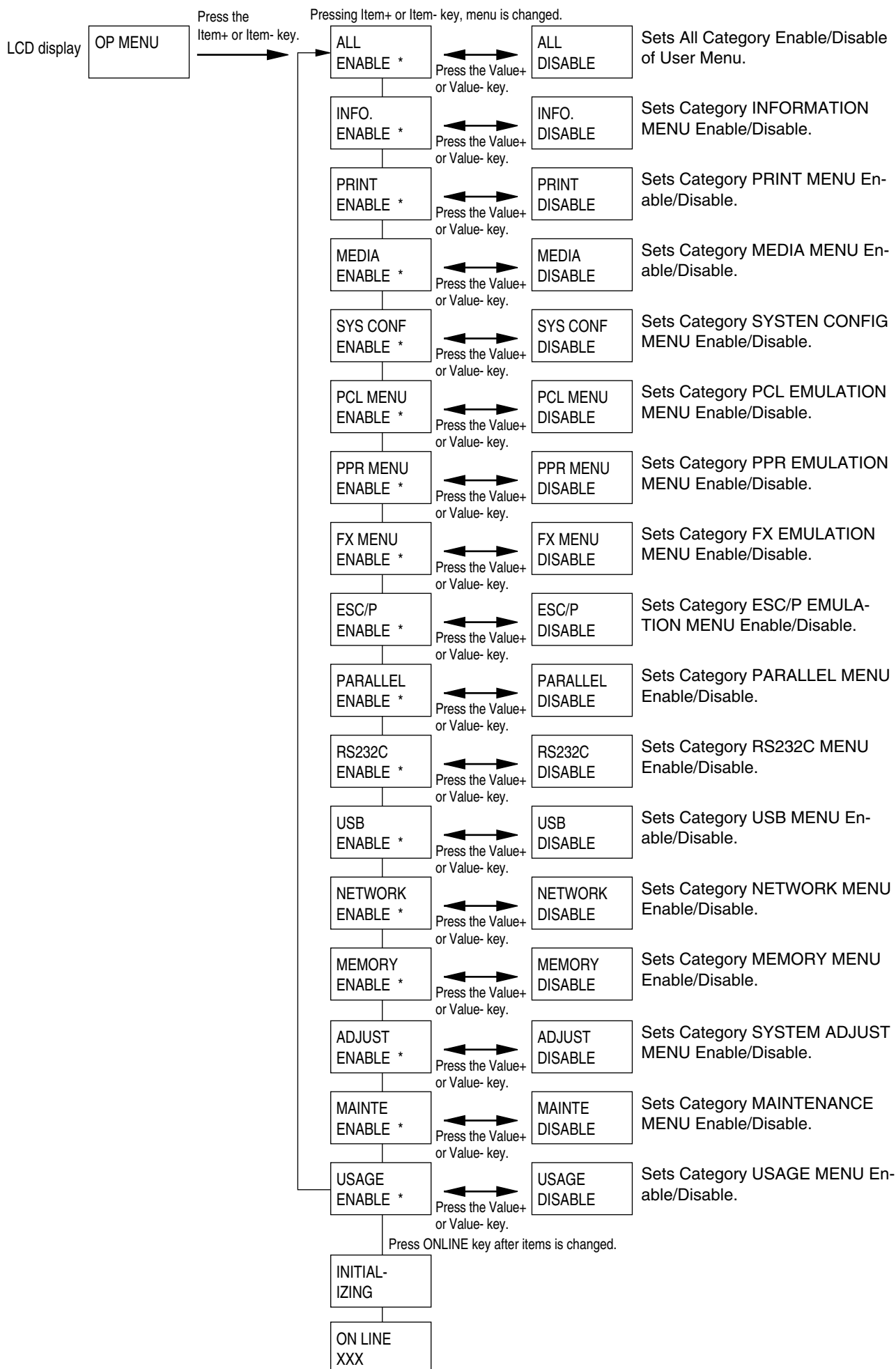
- The maintenance modes consist of the user maintenance mode which are released to the user, and the system and engine maintenance modes in the maintenance personnel level not released to the user.
- Press the MENU key to update each category. The operation returns to the first category after updating the last category, in a loop.
- Press the Enter key to execute the function being displayed.
- To exit from any of these modes during a category display, press the *Recover* or ON LINE key and the operation mode will start.

1.1 **Administrator Mode**

- To enter the administrator mode, turn the power on while keeping the ITEM+/ITEM- key pressed down.
- This mode uses the menu for function selection.
- The administrator mode provides the following functions.

(1) OP MENU

- This function sets each user menu Enable or Disable.



1.2 System Maintenance Mode

- To enter the system maintenance mode, turn the power on while keeping the Menu/ITEM+/VALUE-/CANCEL keys pressed down.
- This mode adopts the menu for function selection.
- The system maintenance mode provides the following functions:

(1) Oki User

- Brands is set.

(2) Maintenance Menu

- Flash ROM Format.
- EEPROM reset to factory default.

(3) Configuration Menu

- Changes operator panel Type1 or Type2.

(4) Engine Start Print

- Engine menu is printed.

(5) Page Count Display

- This function allows the selection to include (enable) or exclude (disable) the total number of printed pages counted at the engine block at the time of menu printing.

(6) Emulate

- Emulate determines the default PDL for each brand.

(7) Loop Test

- The loop test is for testing the serial I/F functions without connecting the printer to the host.
- The data is sent and received by loop back in the loop test.
- The loop test is performed even when another interface is being selected in Menu level-2.
- Installation of the loop connector is necessary for the loop test (refer to Appendix C, LOOP TEST (RS-232C INTERFACE)).

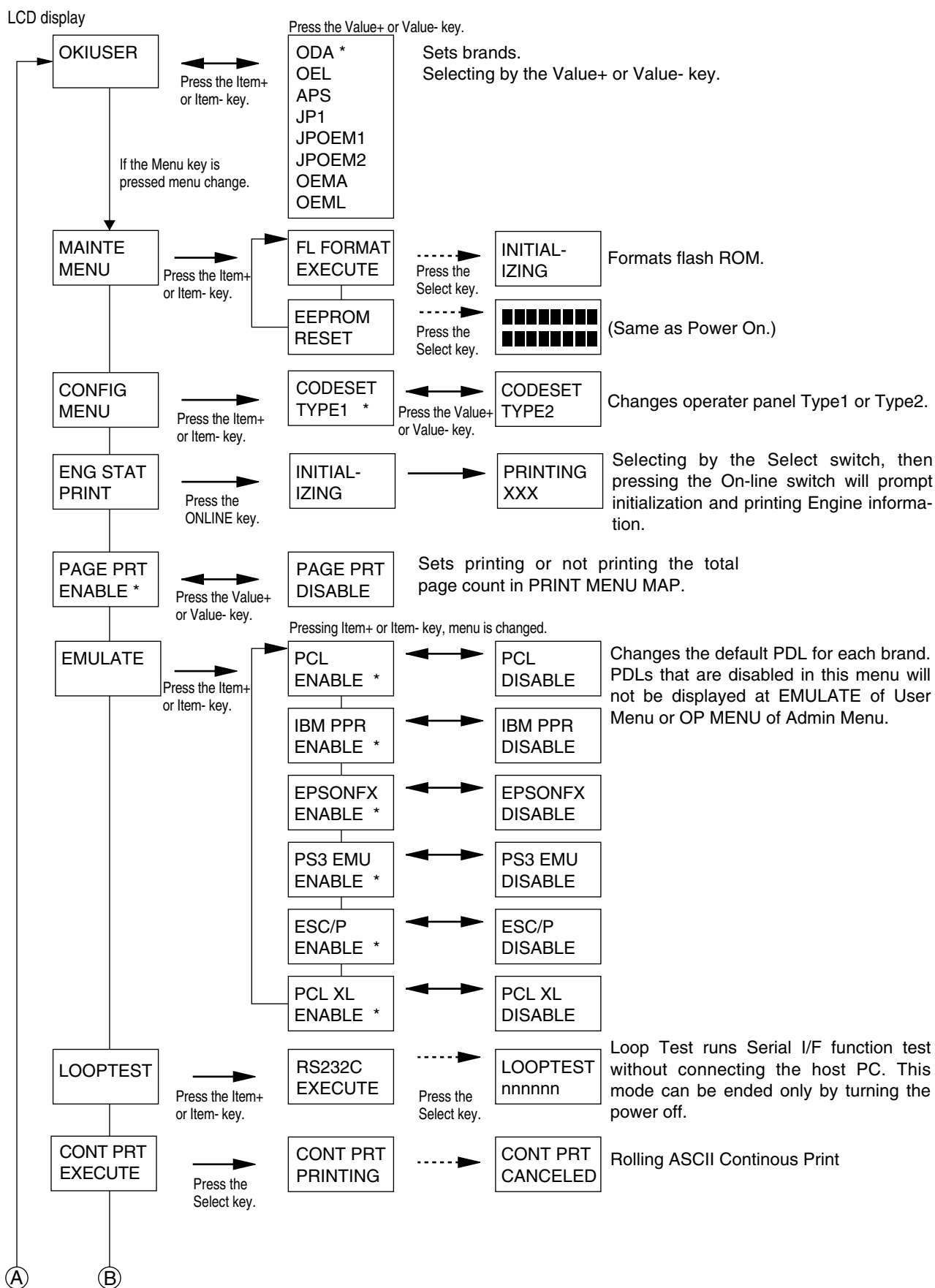
(8) Rolling ASCII Continuous Printing

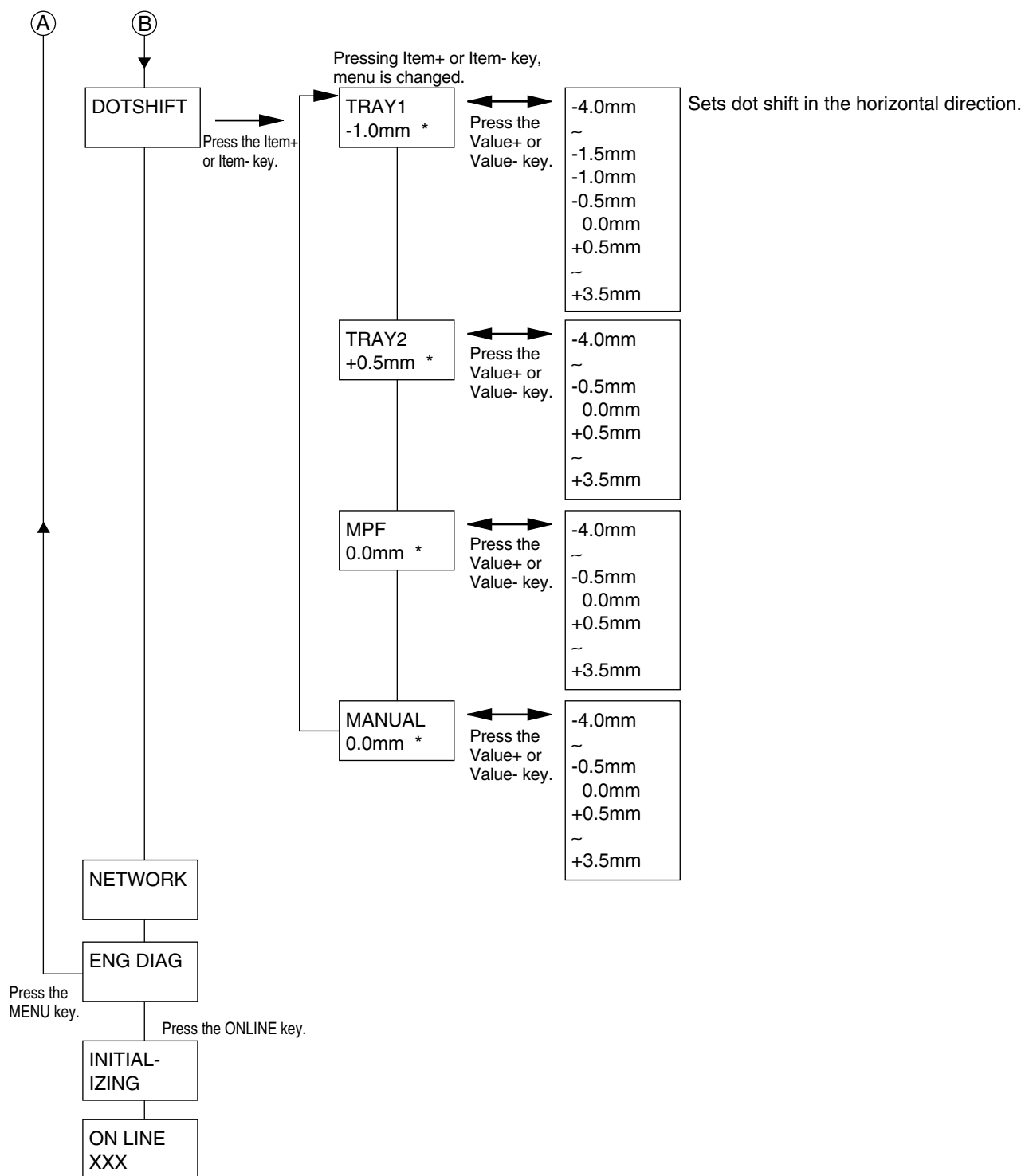
- The rolling ASCII pattern is printed continuously for various engine tests.
- Press the ON LINE key to cancel this mode.

(9) Network

(10) ENG DIAG

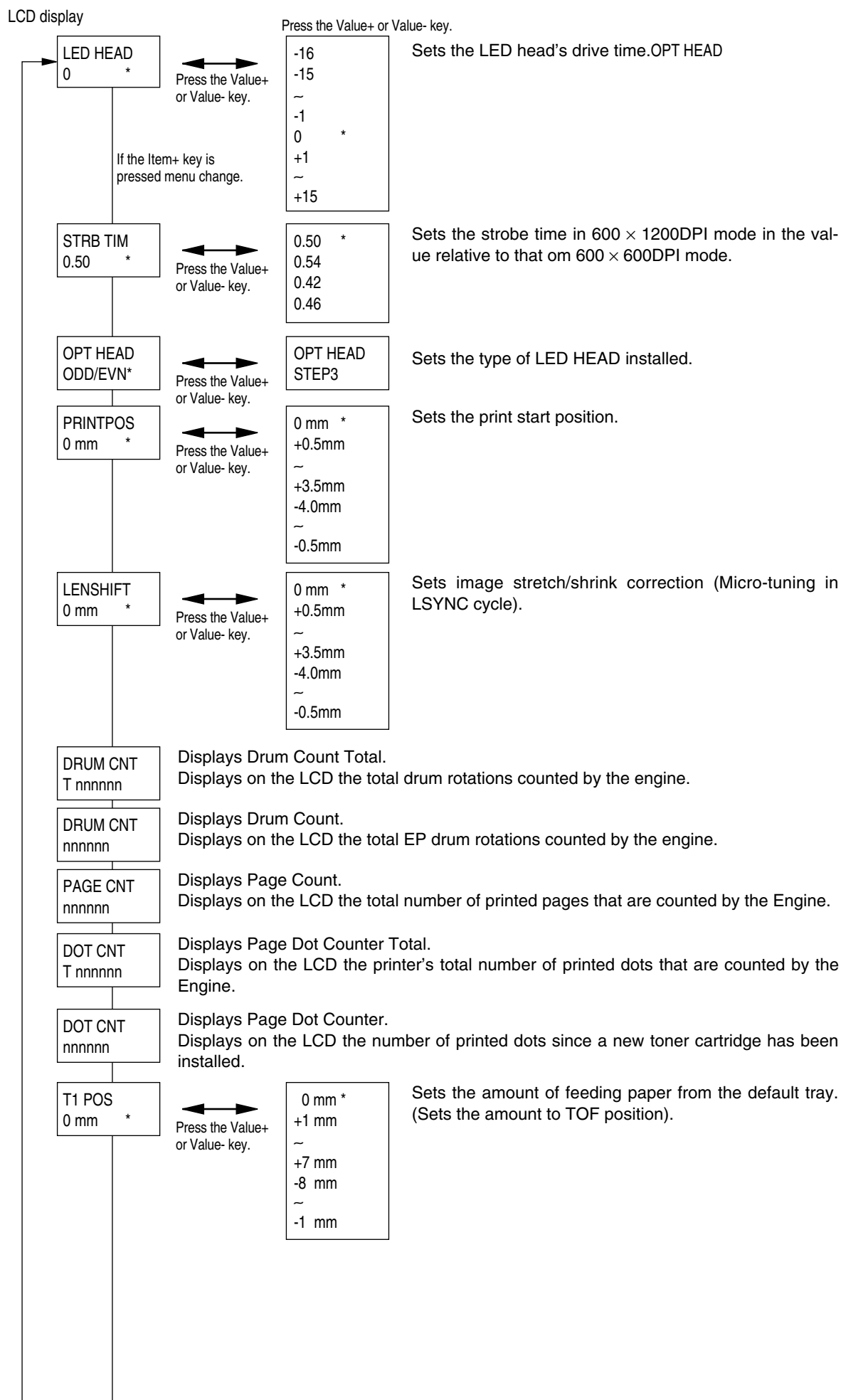
- This function can enter the Engine Maintenance Mode.

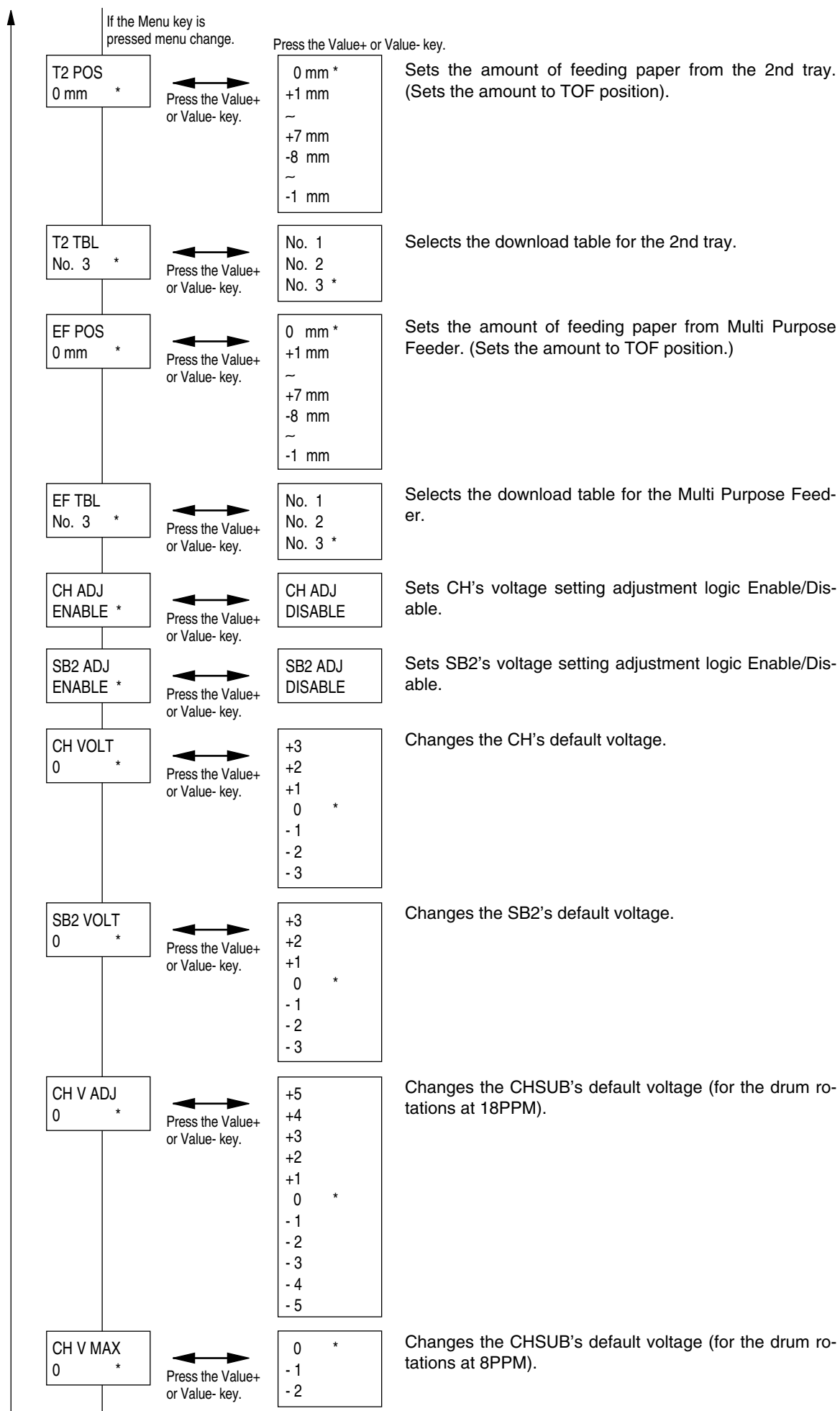


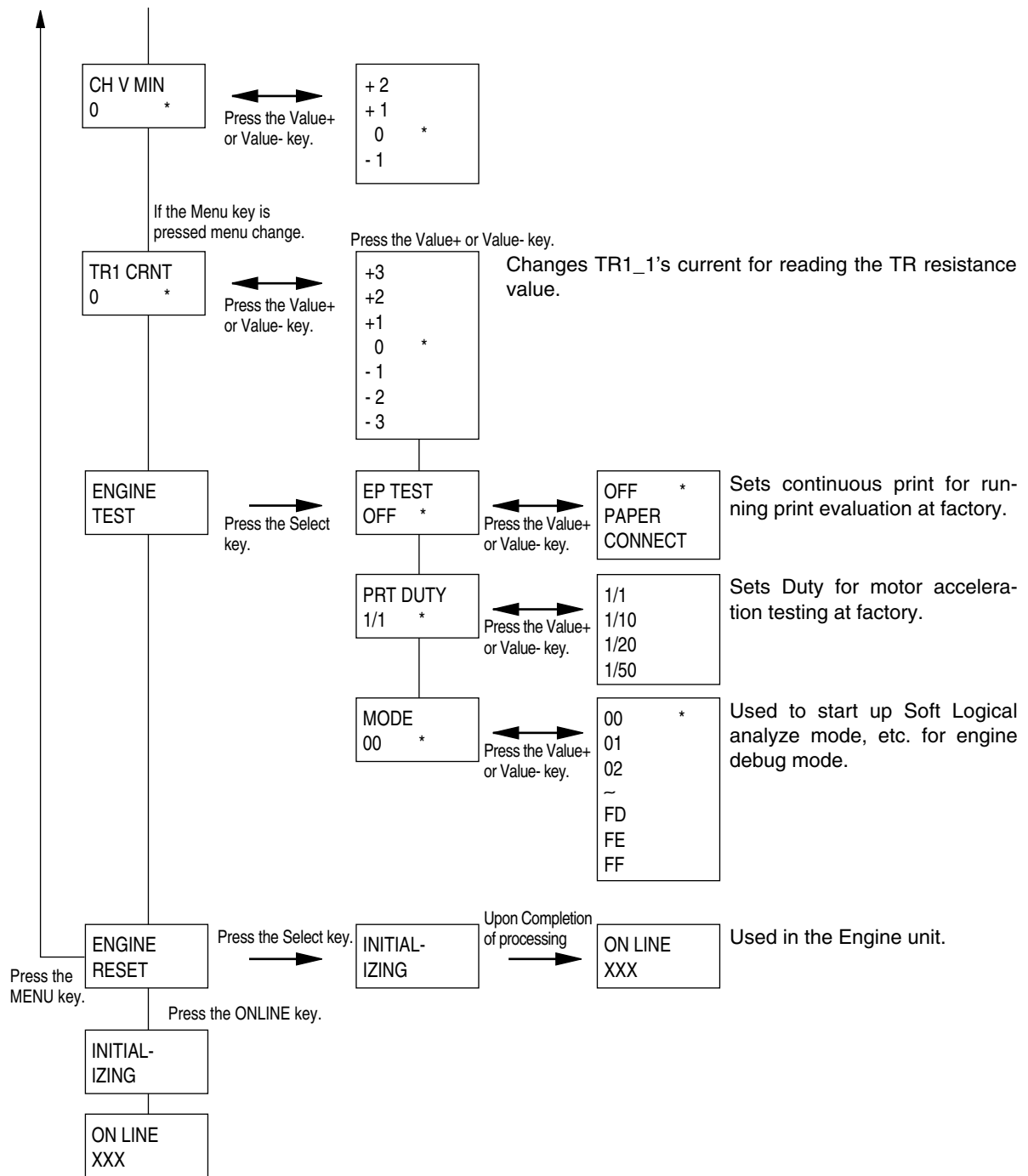


1.3 Engine Maintenance Mode

- To enter engine maintenance mode, enter system maintenance mode and press the Item+ key when "ENG DIAG" is displayed.
- This mode adopts the menu for function selection.
- The method for exit from this mode depends on the setting.
- The engine maintenance mode provides the following functions:
 - (1) Head Drive Time Setting
 - Sets the drive time of the LED head.
 - (2) 600 x 1200 DPI strobe time
 - Do not change the default setting.
 - (3) Printing Start Position Setting
 - Sets the printing start position.
 - (4) Length Shift
 - (5) Dot Shift
 - (6) Drum Count Total Display
 - Displays on the LCD the total number of drum revolutions of the unit, counted at the engine block.
 - (7) Drum Count Display
 - Displays on the LCD the total number of EP drum revolutions counted at the engine block.
 - (8) Factory Adjustment (for High Capacity Second Paper Feeder/Power Envelope Feeder)
 - Do not change the default settings since these are factory settings and were set at the factory.
 - (8) Engine Reset
 - No items subjected to, All except counters are subjected to reset, As a common spec.







1.4 User Factory Set Operation

The desired destination can be set by turning the power on while depressing two keys corresponding to the destination according to the following table.

Destination	Keys to be Depressed
ODA	
OEL	
AOS (A4)	MENU, PAPER SIZE

This function shall not be open for users.

APPENDIX F MULTI PURPOSE FEEDER MAINTENANCE

1. OUTLINE

1.1 Functions

This Multi-Purpose Feeder is installed on the front section of the printer, and it supplies paper automatically through the operation of pulse motor, which is driven by signals sent from the printer. The main functions are the followings:

- Paper that can be used:

[Paper Types]

- Standard paper: Xerox 4200 (20-lb)
- Special paper: OHP sheets (for PPC), label sheets (PPC sheets)
* Not guaranteed for OHP sheets with attachments on the edge or reverse side.
- Cut sheet size: Letter, Executive, A4, A5, B5, A6, COM9, COM10, Monarch, DL, C5
- Special size: Width: 87 to 216mm
Length: 148 to 297mm

[Weight and Thickness]

- 16-lb to 32-lb (60~128 g/m²)
- For labels and OHP Sheets: Label sheets: 0.1 to 0.15mm
OHP sheets: 0.08 to 0.11mm

* When using sheets which exceed 24-lb, make sure that the paper exits through the face-up route.

1.2 External View and Component Names

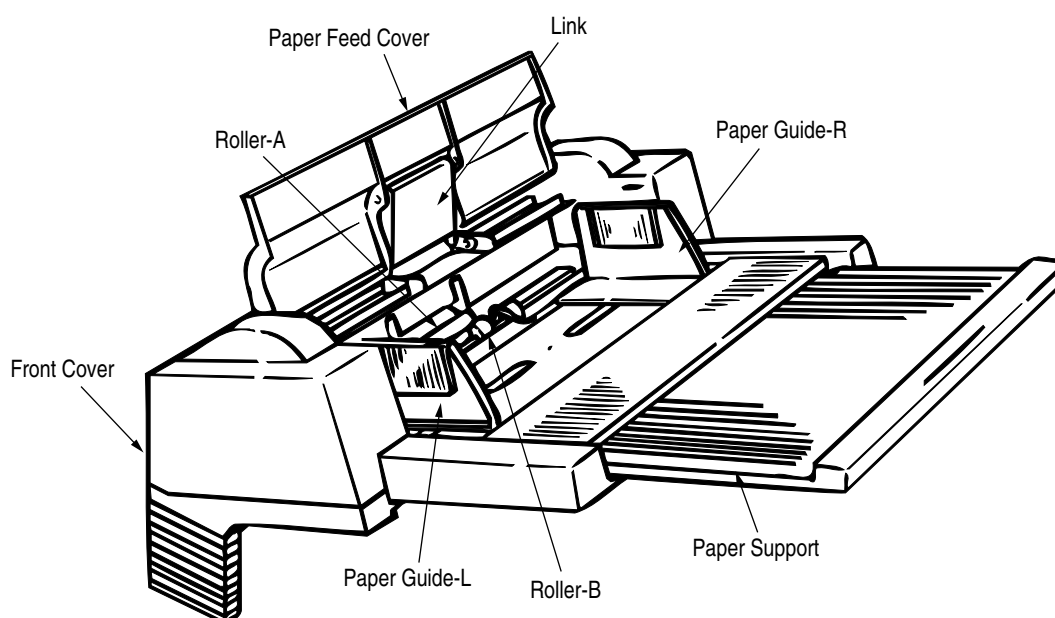


Figure 1-1

2. MECHANISM DESCRIPTION

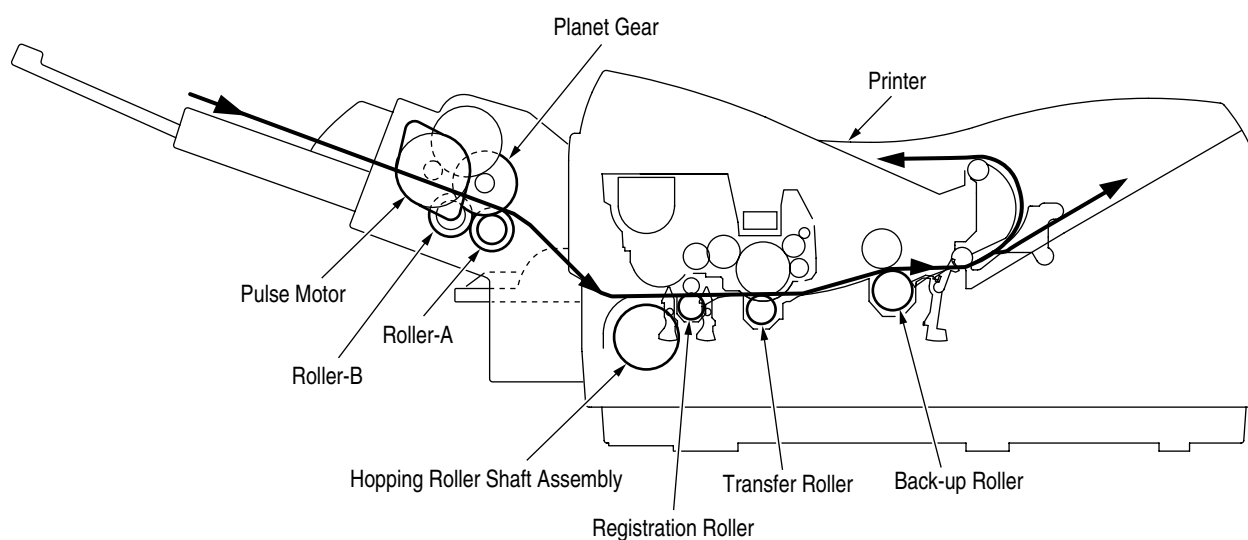
2.1 General Mechanism

The Multi-Purpose Feeder feeds the envelopes and paper into the printer by receiving the signal from the printer, which drives the pulse motor inside the Multi-Purpose Feeder, and this motion is transmitted to rotate roller-A and B. The envelope or paper is delivered from the separator into the printer.

Once delivered into the printer, the envelope or paper is then controlled and fed through by pulse motor (registration) of the printer.

2.2 Hopper Mechanism

The hopper automatically feeds the printer with the envelope or paper being set, one sheet at a time. After the envelope or paper is set in the Multi-Purpose Feeder, the pulse motor moves the envelope or paper and a single envelope or paper caught by the separator is fed into the printer.



3. PARTS REPLACEMENT

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.

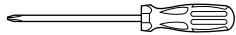

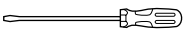
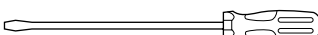

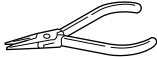
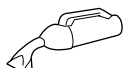
3.1 Precautions Concerning Parts Replacement

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the Multi-Purpose Feeder from the printer.
- (2) Do not disassemble the Multi-Purpose Feeder if it is operating normally.
- (3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.
- (4) Only specified service tools may be used.
- (5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.
- (6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.
- (7) When handling printed circuit boards, do not use any glove which may generate static electricity.
- (8) Do not place the printed circuit boards directly on the equipment or floor.

[Service Tools]

Table 3-1 shows the tools required for the replacement of printed circuit boards, assemblies and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2 ~ 2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3 ~ 5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 No. 5-200 screwdriver	1		
5	 Digital multimeter	1		
6	 Pliers	1		
7	 Handy cleaner	1		

3.2 Parts Layout

This section describes the layout of the main components.

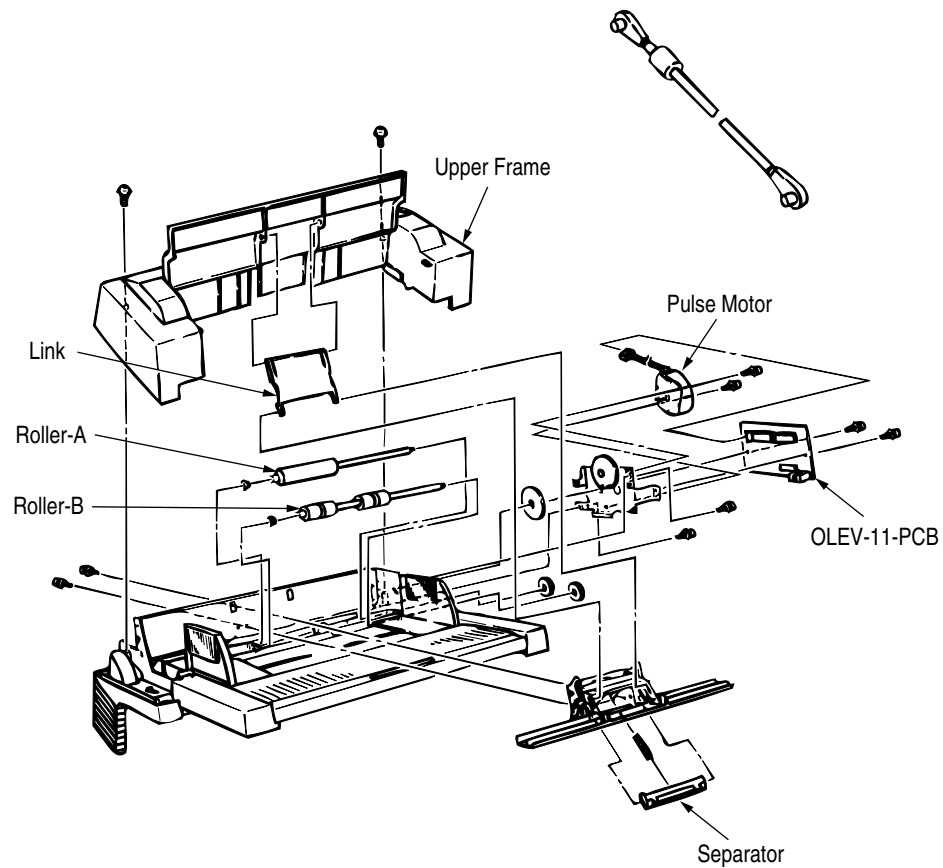
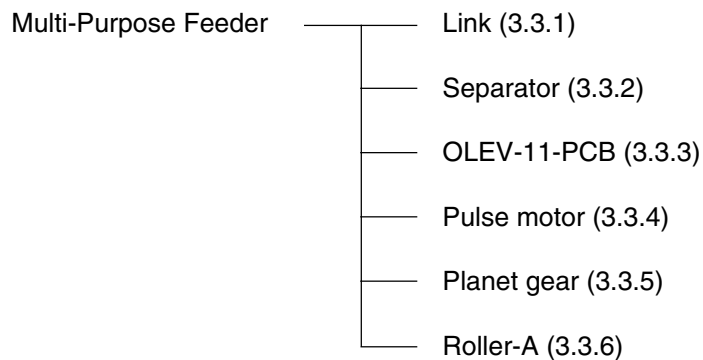


Figure 3-1

3.3 Parts Replacement Methods

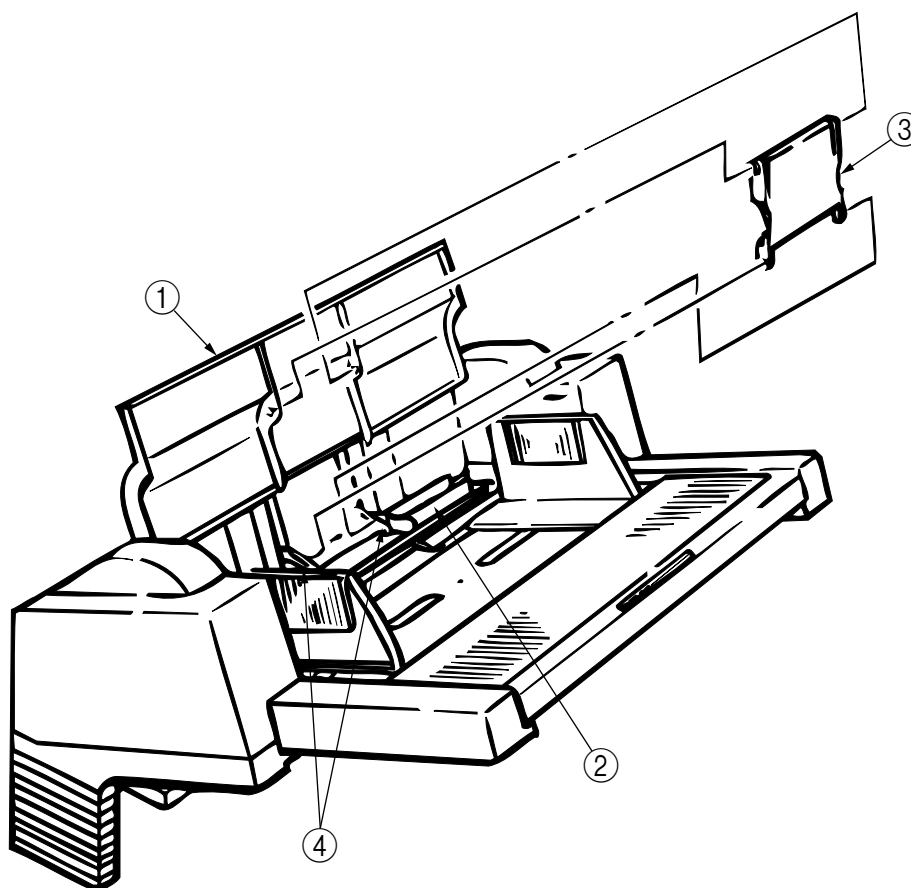
This section describes the parts replacement methods for the components listed in the disassembly order diagram below.



3.3.1 Link

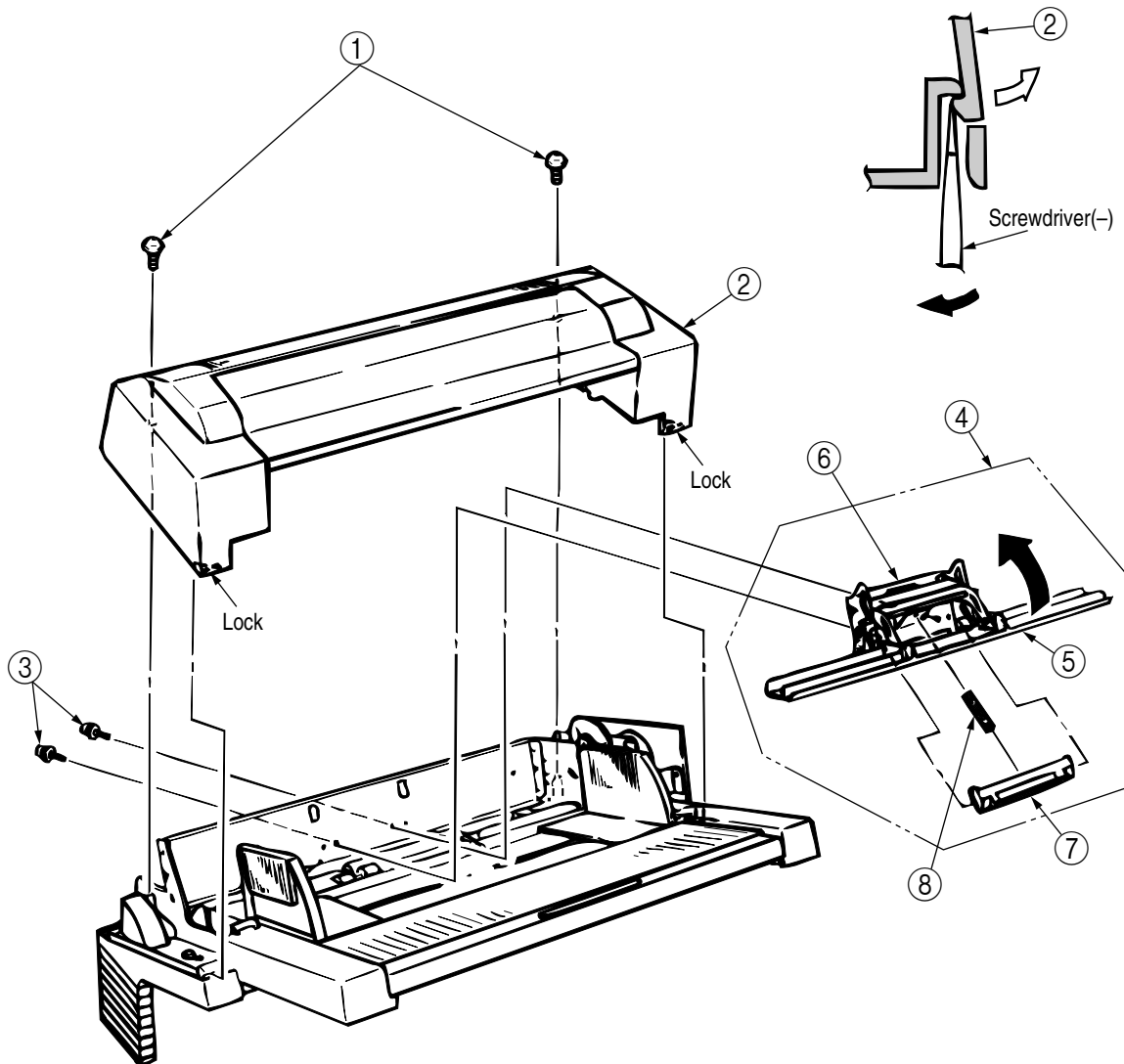
- (1) Open paper feed cover ①, and disengage the paper feed cover ① and link ③, while lifting the paper hold ②.
- (2) Remove the paper hold ② off the arm ④.
- (3) Disengage the link ③ from the arm ④, and remove it.

* Be careful not to deform the link and arm.



3.3.2 Separator

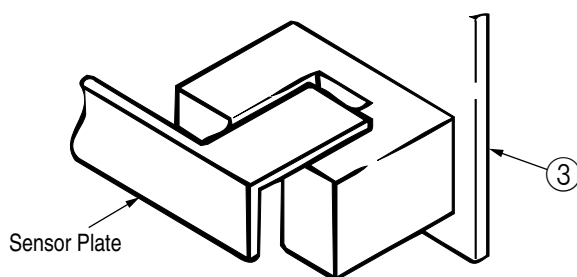
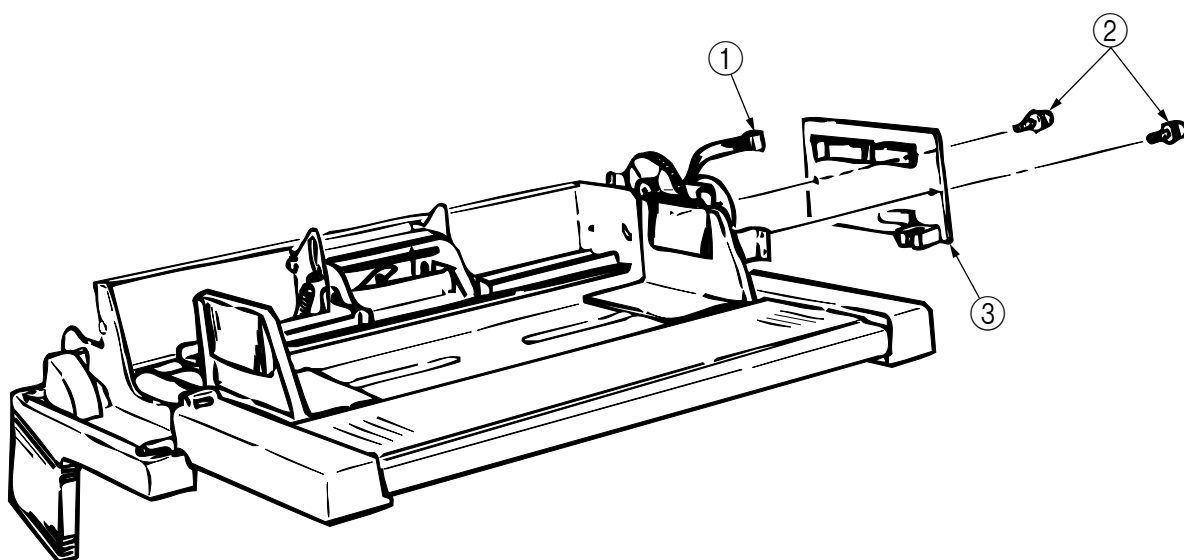
- (1) Turn the power switch off "O" and remove the connector cable.
- (2) Disengage the link and paper feeder cover (see 3.3.1).
- (3) Remove 2 screws ①, disengage the locks at 2 locations on the upper frame ② with a screwdriver, and remove the upper frame ②.
- (4) Remove 2 screws ③, and take out the separator assembly ④.
- (5) Disengage the separator ⑦ from the separator bracket ⑥ while lifting the paper hold ⑤, and take out the separator (be careful not to lose the spring ⑧ when you are doing this).



3.3.3 OLEV-11-PCB

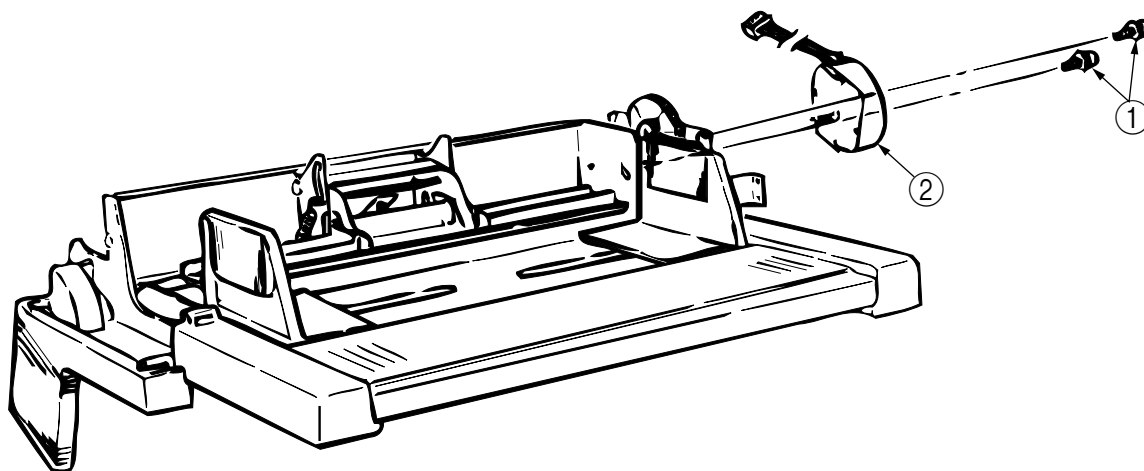
- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the connector ①.
- (3) Remove 2 screws ②, and remove the OLEV-11 PCB ③.

When reinstalling the printed circuit board, be careful to make sure that the sensor plate is being set correctly.



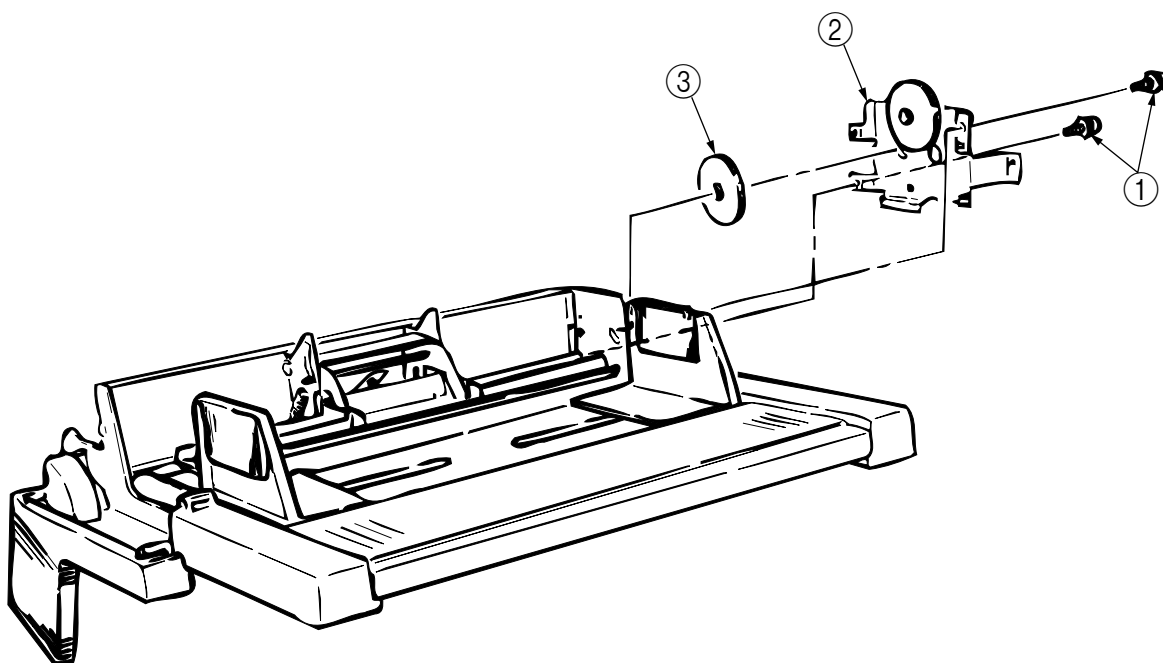
3.3.4 Pulse Motor

- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the OLEV-11-PCB (see 3.3.3).
- (3) Remove 2 screws ①, and remove the pulse motor ②.



3.3.5 Planet Gear

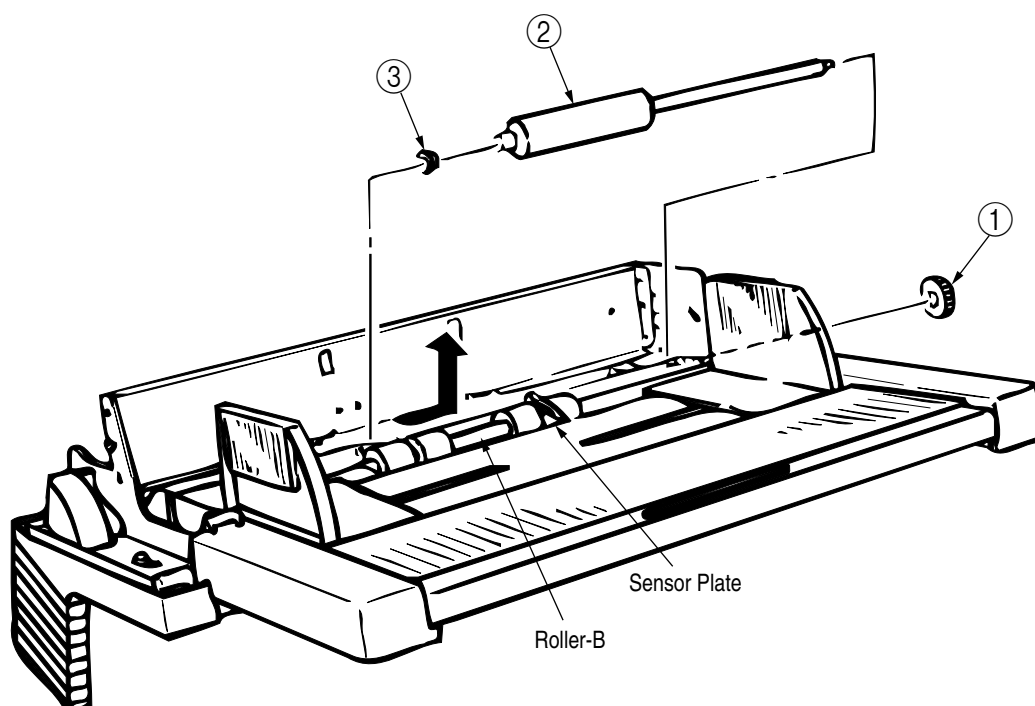
- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the OLEV-11-PCB (see 3.3.3).
- (3) Remove 2 screws ①, and remove the motor bracket assembly ② and planet gear ③.



3.3.6 Roller-A and B

While only the removal procedure for roller-A is described here, the removal procedure for roller-B is basically same. When removing roller-B, however, be careful not to deform the sensor plate.

- (1) Remove the upper frame [see 3.3.2 steps (1) through (3)].
- (2) Remove the separator assembly (see 3.3.2).
- (3) Remove the OLEV-11-PCB (see 3.3.3).
- (4) Remove the motor bracket (see 3.3.5).
- (5) Remove the gear ①.
- (6) Shift the roller-A ② to the right, lift it on its left side and slide it out (the bearing ③ also comes off while you are doing this, so be careful not to lose it).



4. TROUBLESHOOTING

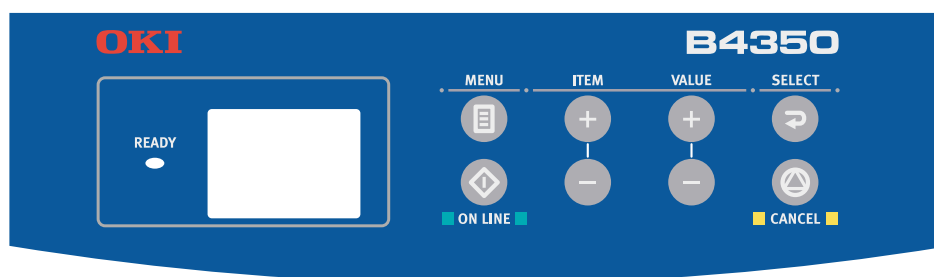
4.1 Precautions Prior to the Troubleshooting

- (1) Go through the basic checking items provided in the Printer Handbook.
- (2) Obtain detailed information concerning the problem from the user.
- (3) Go through checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for the Troubleshooting

- (1) Display on the operator panel
The status of the problem is displayed on the LCD (Liquid Crystal Display) on the operator panel. Go through the appropriate troubleshooting procedures according to the messages displayed on the LCD.

[For ODA/OEL/AOS]



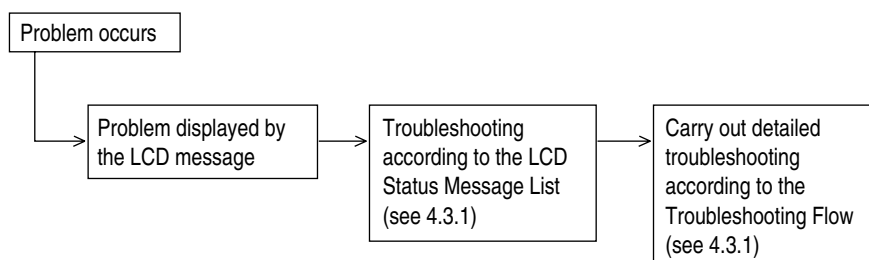
Status message display

Ready LED display

 : OFF	 : BLINKING
 : ON	 : Undefined

4.3 Troubleshooting Method






When a problem occurs, go through the troubleshooting according to the following procedure.



4.3.1 LCD Status Message List

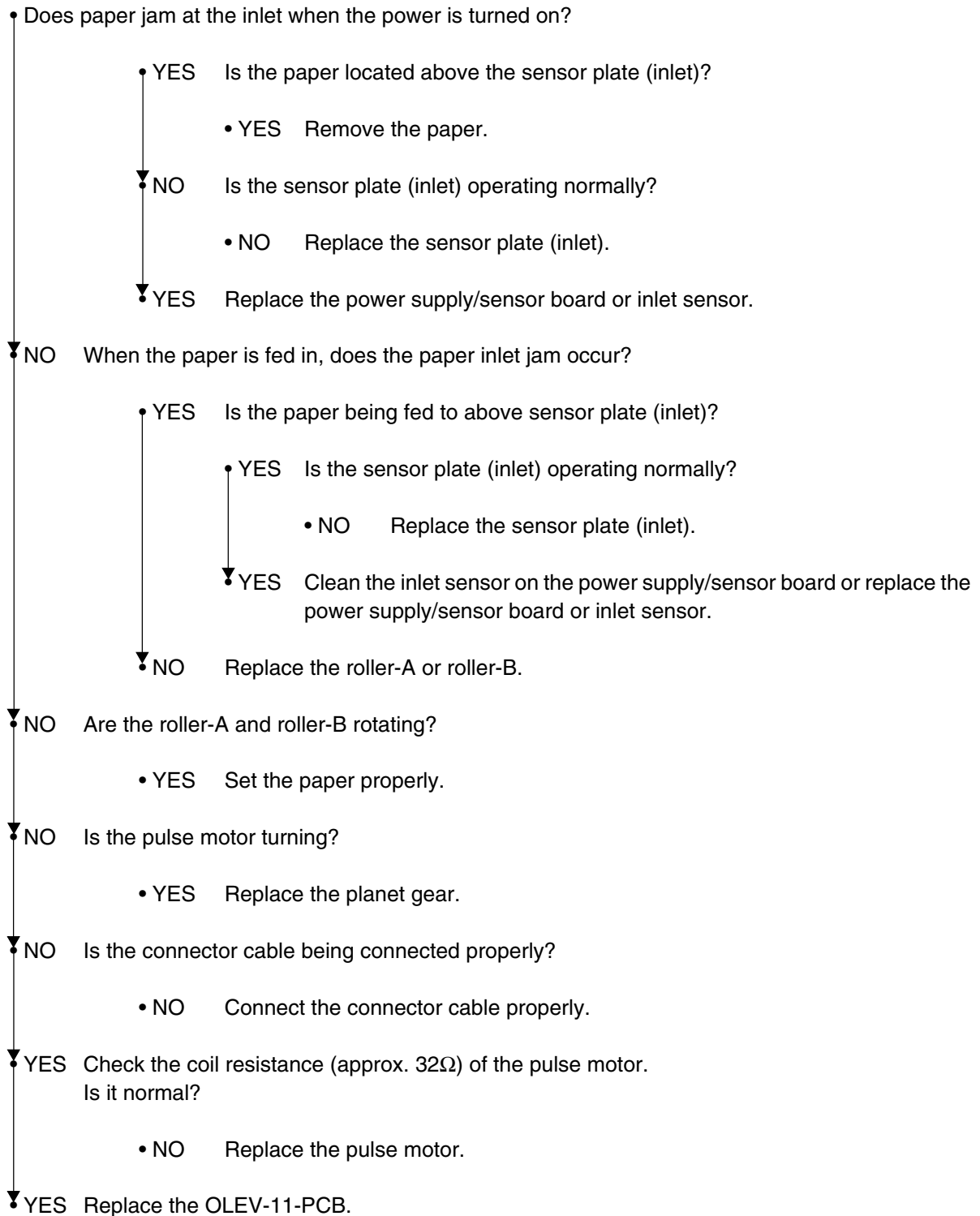
The listing of the statuses and problems displayed in the form of messages on the LCD is provided in Table 4-1.

Table 4-1

Classification	LCD Status Message	Description	Recovery method
Jam error	<div>  <div>CHECK MFP PAPER JAM</div> </div> <div>  <div>OPEN UPPER COVER PAPER JAM</div> </div> <div>  <div>OPEN UPPER COVER EXIT JAM</div> </div>	Notices of occurrence of jam while the paper is being fed from Multi-Purpose Feeder. Scroll display.	<ul style="list-style-type: none"> Check the paper in the Multi-Purpose Feeder. Carry out the recovery printing by opening and closing the cover, and turn the error display off. When the problem occurs frequently, go through the Troubleshooting.
Paper size error	<div>  <div>OPEN UPPER COVER PAPER SIZE ERROR</div> </div>	Notices of incorrect size paper feeding from Multi-Purpose Feeder. Scroll display.	<ul style="list-style-type: none"> Check the paper in the Multi-Purpose Feeder. Also check to see if there was a feeding of multiple sheets. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Tray paper out	<div>  <div>LOAD mmmm MPF EMPTY</div> </div> <div> mmmm : Paper size (A4, Letter, etc.) </div>	Notices of no paper state of the Multi-Purpose Feeder. Scroll display.	<ul style="list-style-type: none"> Load the paper in Multi-Purpose Feeder.

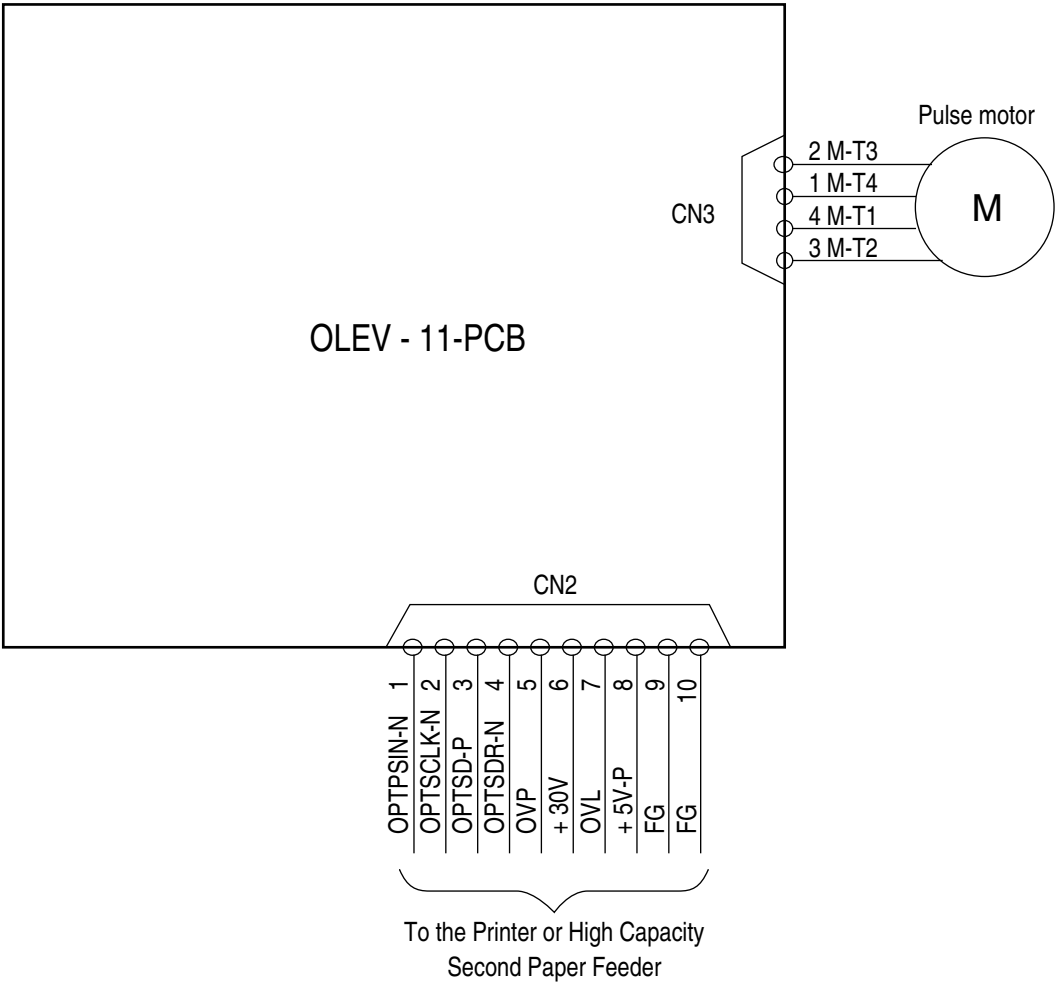
- (JAM error)

Paper Inlet Jam



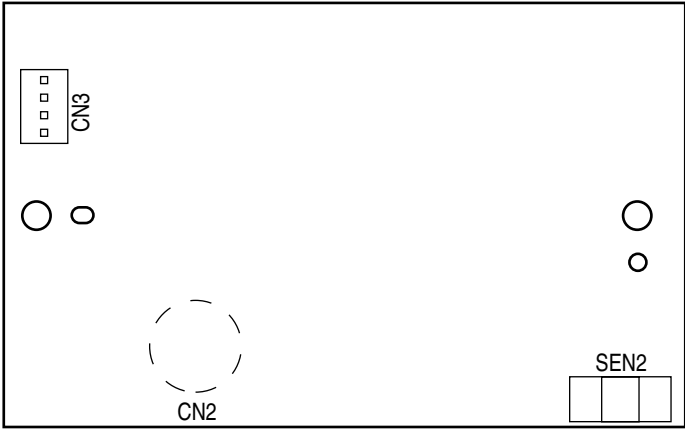
5. CONNECTION DIAGRAM

5.1 Interconnection Diagram



5.2 PCB Layout

OLEV-11-PCB



6. PARTS LIST

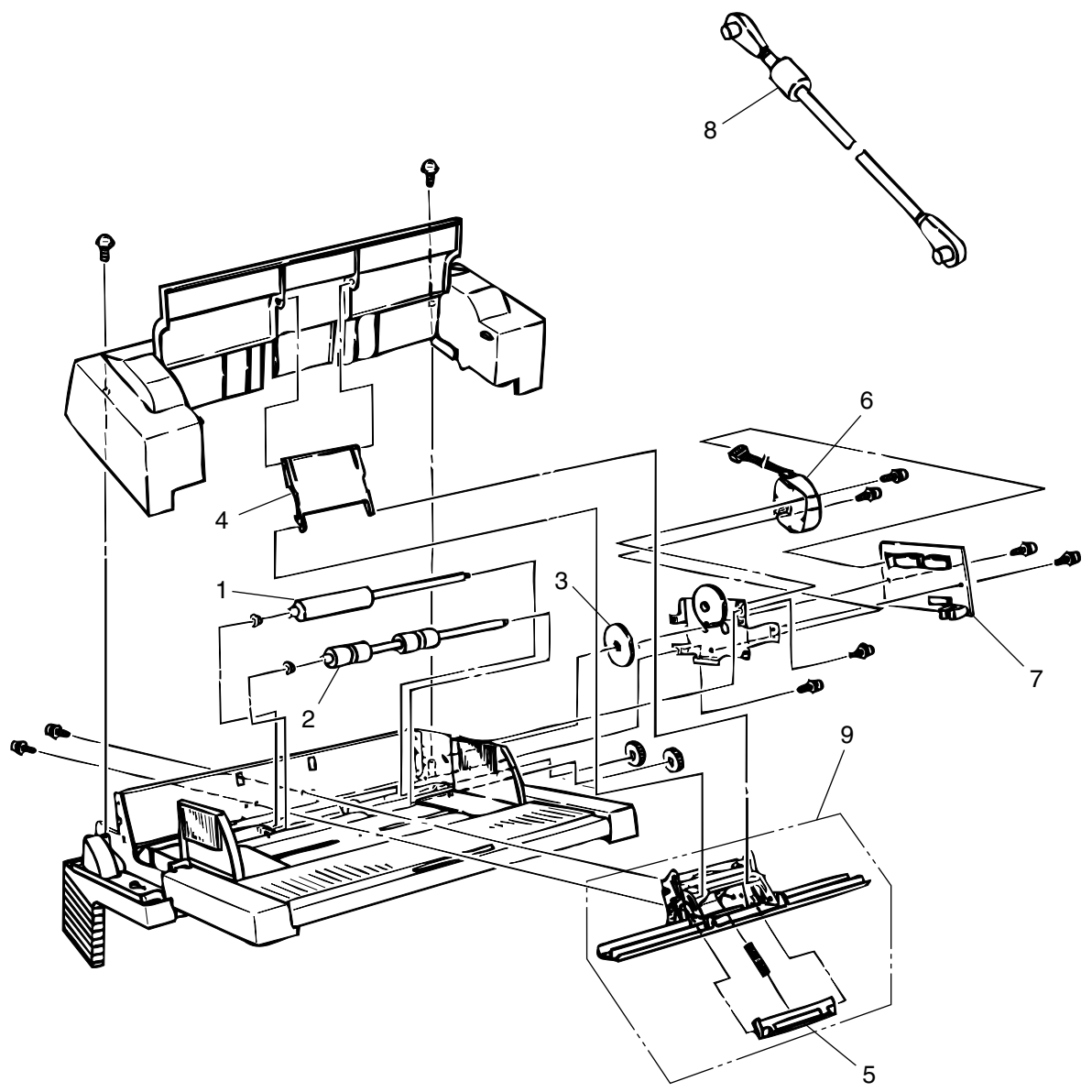


Figure 6-1 Multi-Purpose Feeder

Table 6-1 Multi-Purpose Feeder

No.	Description	OKI-J Part No.	ODA Part No.	Q'ty	Remark
1	Roller-A	3PB4083-5514P001		1	
2	Roller-B	3PB4083-5524P001		1	
3	Planet gear	4PP4083-5520P001		1	
4	Link	3PP4083-5540P001		1	
5	Separator	4PP4083-5544G001		1	
6	Pulse motor	4PB4083-6075P001		1	Same as printer unit.
7	OLEV-11-PCB	4YA4121-1014G011		1	
8	Connector cable	3YS4011-3141P003		1	ODA (exist the label)
		3YS4011-3141P001		1	OEL/INT(without the label)
9	Separator assy	3PA4083-5549G001		1	

APPENDIX G HIGH CAPACITY SECOND PAPER FEEDER

1. OUTLINE

1.1 Functions

The printer is mounted on top of this High Capacity Second Paper Feeder. The High Capacity Second Paper Feeder supplies paper automatically through the operation of pulse motor (hopping), which is driven by signals sent from the printer.

The main functions are the followings:

- Paper that can be used:

[Paper Type]

- Standard paper: Xerox 4200 (20-lb)
- Special paper: OHP sheets (for PPC), Label sheets (PPC sheets); use of envelopes or thick paper is not possible.
- Cut sheet size: A4, A5, B5, Letter, Executive, Legal13, Legal14
- Special size: Paper width: 148 to 216mm
Paper length: 210 to 355.6mm

[Weight]

- 16-lb to 24-lb (60 to 90 g/m²)
- Paper setting quantity: 500 sheets of paper weighing 64 g/m²

1.2 External View and Component Names

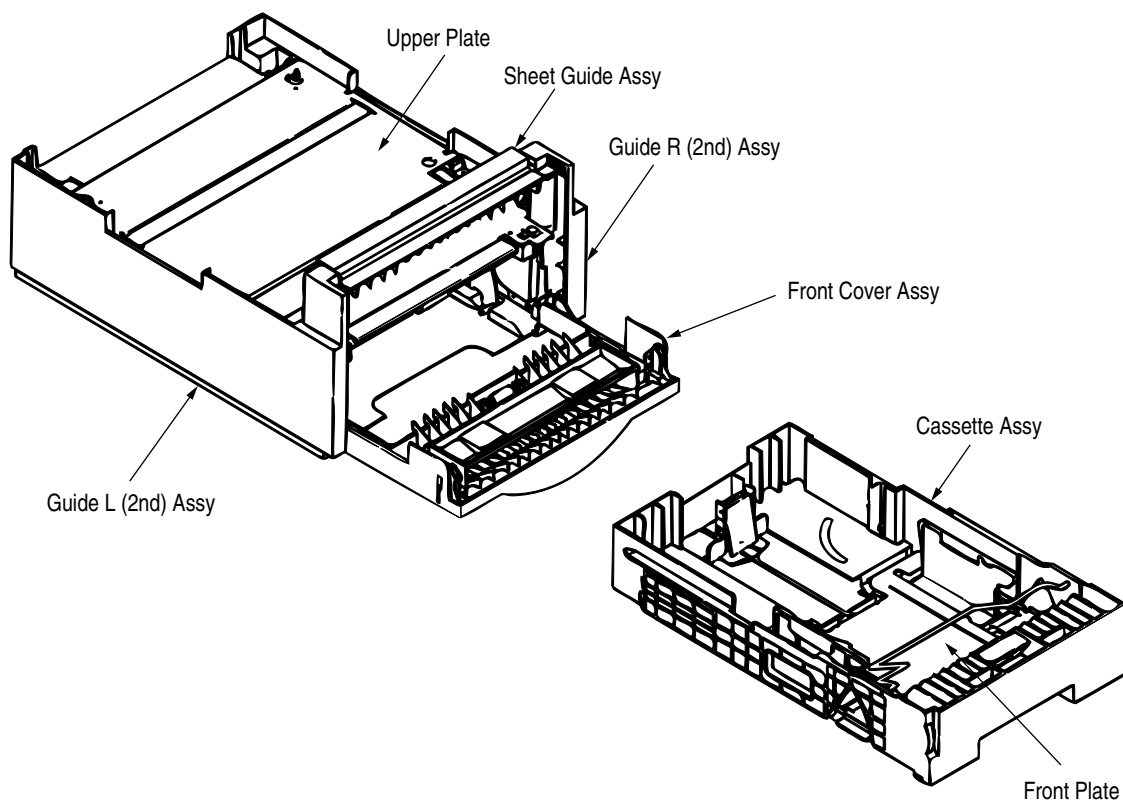


Figure 1-1 External View and Component Names

2. MECHANISM DESCRIPTION

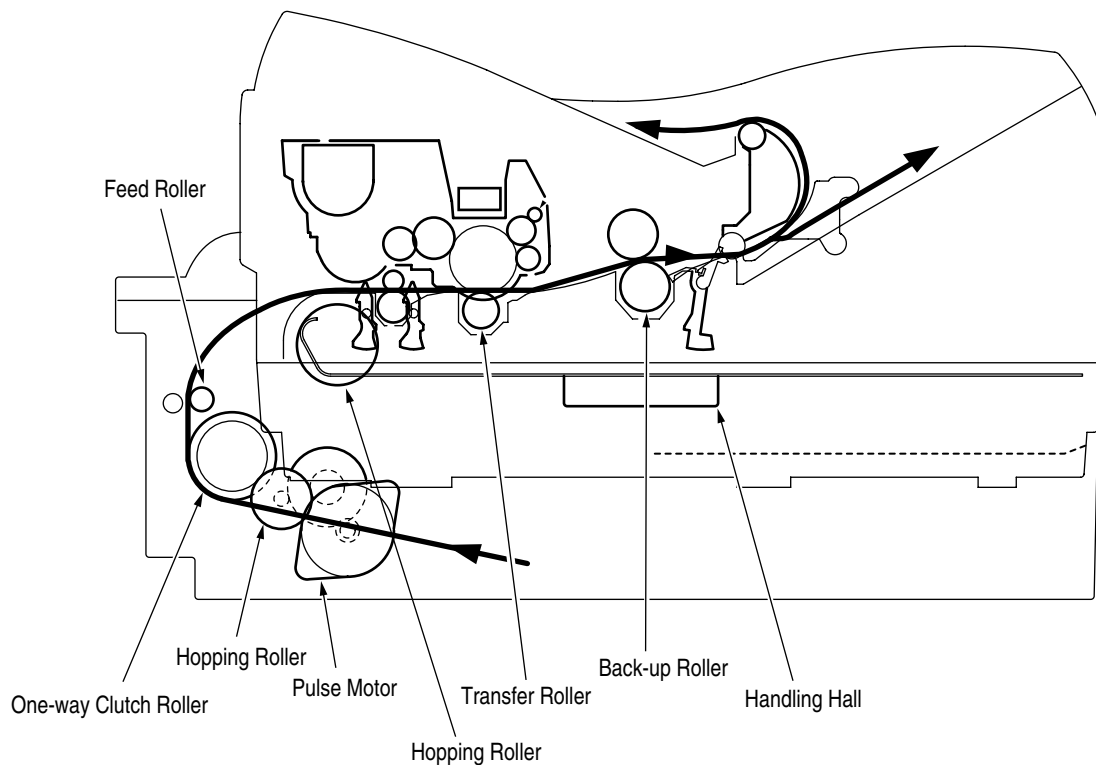
2.1 General Mechanism

The High Capacity Second Paper Feeder feeds the paper into the printer by receiving the signal from the printer, which drives the pulse motor inside the High Capacity Second Paper Feeder, and this motion is transmitted to rotate the one-way clutch of the hopping frame assembly. The paper is delivered from the hopper into the printer through the turning of the hopping roller and feed roller.

Once delivered into the printer, the paper is then controlled and fed through by pulse motor (registration) of the printer.

2.2 Hopper Mechanism

The hopper automatically feeds the printer with the paper being set, single sheet at a time. When the paper is loaded in the paper cassette, it is then transported by the pulse motor, carrying forward only a single sheet caught by the brake shoe at a time.



3. PARTS REPLACEMENT

This section covers the procedures for the disassembly, reassembly and installations in the field. This section describes the disassembly procedures, and for reassembly procedures, basically proceed with the disassembly procedures in the reverse order.





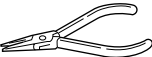
3.1 Precautions Concerning Parts Replacement

- (1) Parts replacements must be carried out, by first turning the printer power switch off "O" and removing the printer from the High Capacity Second Paper Feeder.
- (2) Do not disassemble the High Capacity Paper Feeder if it is operating normally.
- (3) Establish the extent of disassembly suitable for the purpose of the procedure, and do not disassemble any more than necessary.
- (4) Only specified service tools may be used.
- (5) Disassembly must be carried out according to the prescribed procedures. Parts may be damaged if such procedures are not followed.
- (6) Small parts such as screws and collars can easily be lost, therefore these parts should be temporarily fixed in the original location.
- (7) When handling printed circuit boards, do not use any glove which may generate static electricity.
- (8) Do not place the printed circuit boards directly on the equipment or floor.

[Service Tools]

Table 3-1 shows the tools required for the replacement of printed circuit boards, assemblies and units in the field.

Table 3-1 Service Tools

No.	Service Tools	Q'ty	Application	Remarks
1	 No. 1-100 Philips screwdriver	1	2 ~ 2.5 mm screws	
2	 No. 2-100 Philips screwdriver	1	3 ~ 5 mm screws	
3	 No. 3-100 screwdriver	1		
4	 Digital multimeter	1		
5	 Pliers	1		

3.2 Parts Layout

This section describes the layout of the main components.

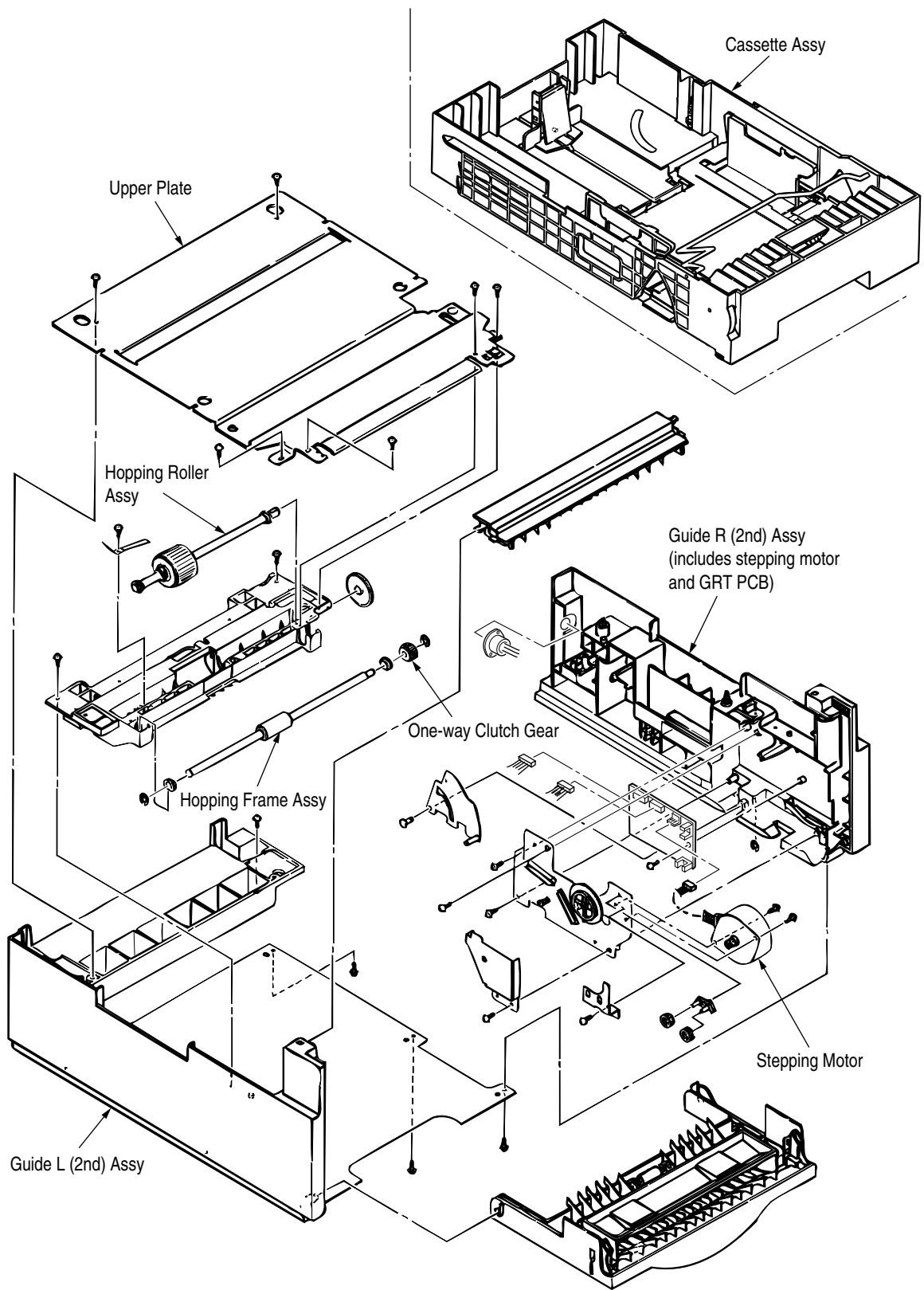
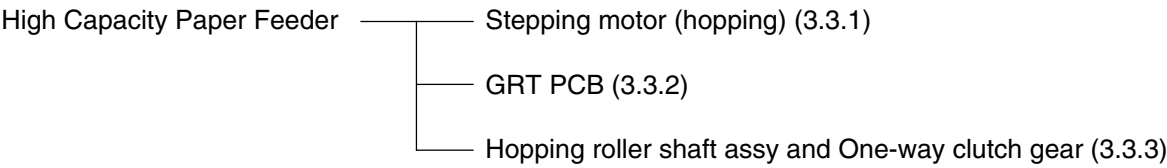


Figure 3-1

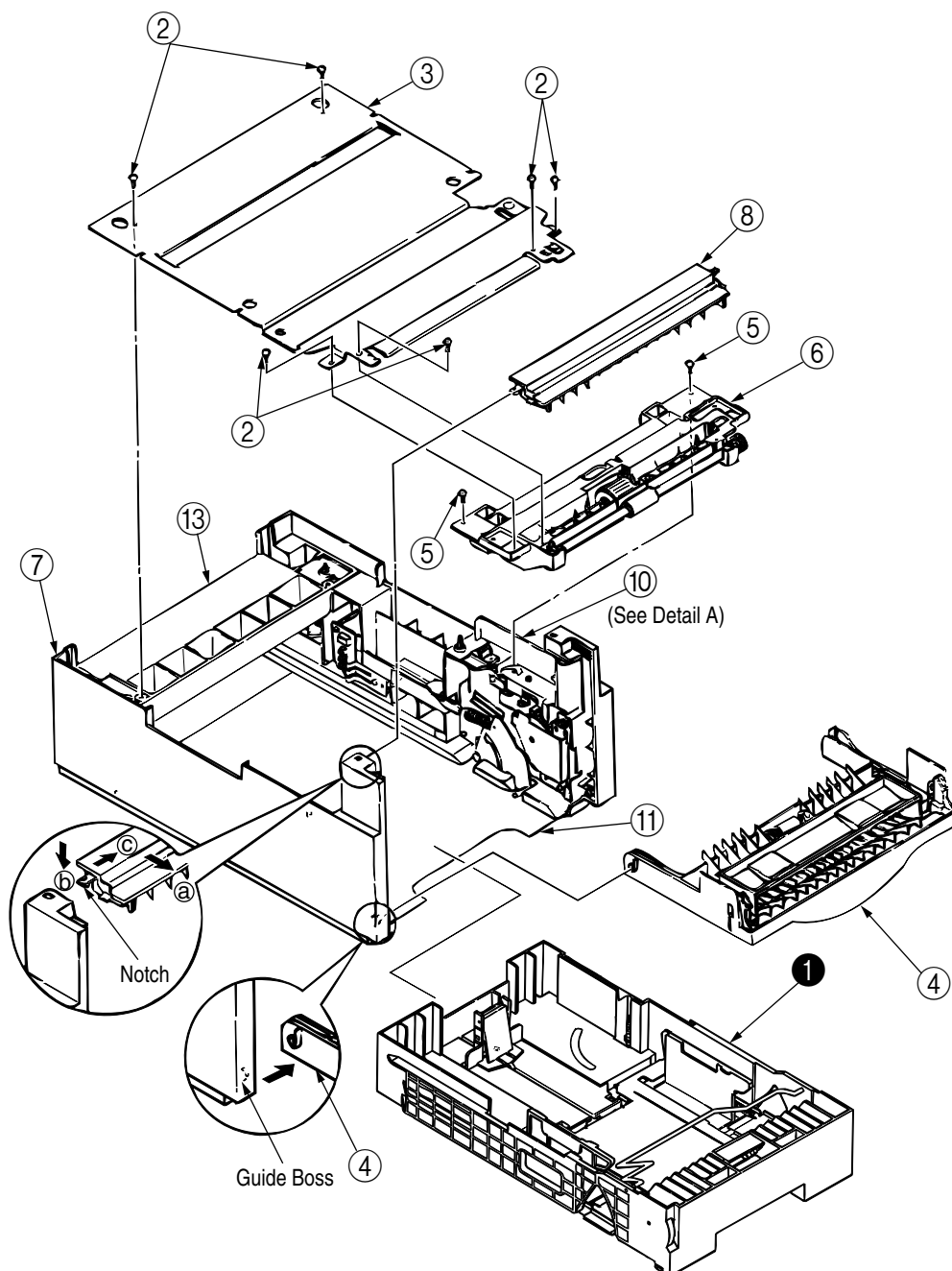
3.3 Parts Replacement Methods

This section describes the parts replacement methods for the components listed in the disassembly order diagram below.



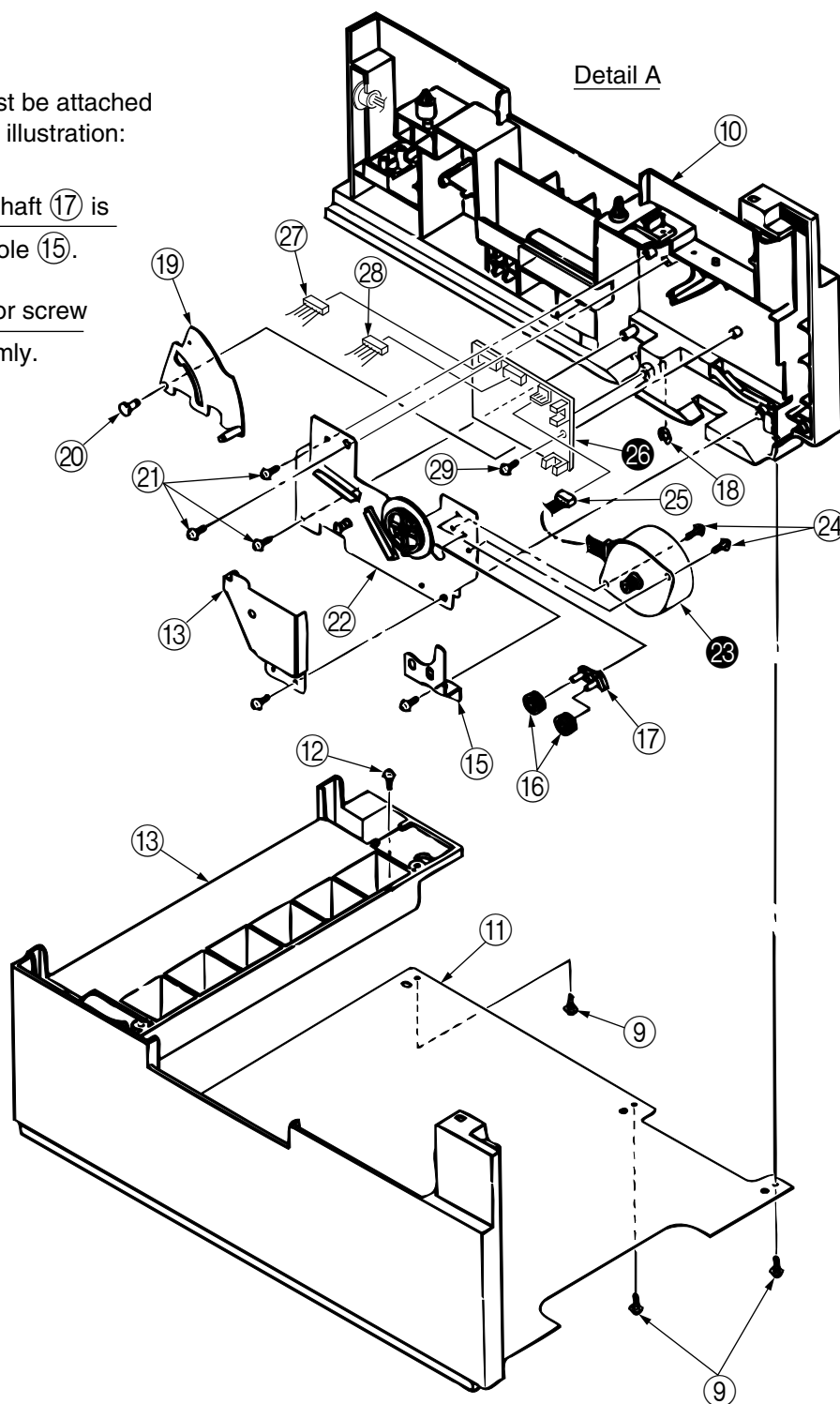
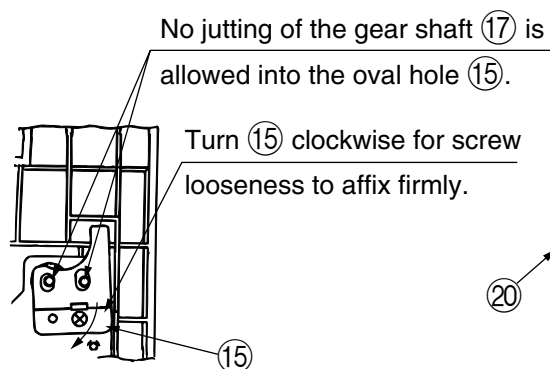
3.3.1 Stepping Motor (Hopping)

- (1) Turn the printer power switch off, pull out the AC cord from the outlet. Remove the printer off High Capacity Second Paper Feeder.
- (2) Take the paper cassette assy ❶ out of High Capacity Second Paper Feeder.
- (3) Remove six screws ❷ and remove the upper plate ❸. Remove two screws ❹ and remove the hopping frame assy ❺.
- (4) Remove the front cover assy ❹ off the guide boss on the guide L (2nd) assy ❷ by bending the guide L (2nd) assy ❷ in the direction of arrow shown in the magnified view below.
- (5) Pull the sheet guide assy ❸ in the direction of arrow ❶ and also push in the direction of arrow ❷ to unlock the notch, and bring the sheet guide assy ❸ in the direction of arrow ❸ to remove the sheet guide assy ❸.

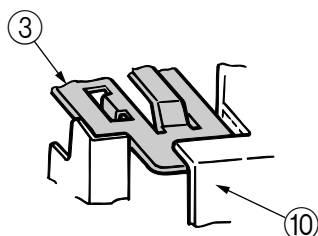


- (6) Remove three screws ⑨ which are holding the guide R (2nd) assy ⑩ to the bottom plate ⑪. Remove the screw ⑫ which is keeping the rear cover ⑬ and guide R (2nd) assy ⑩. Remove the guide R (2nd) assy ⑩.
- (7) Remove the protect (M) ⑭, guide bracket ⑮, planet gears ⑯ and planet gear bracket ⑰.
- (8) Remove the E-ring ⑱ which is keeping the sheet link ⑲ on the guide R (2nd) assy ⑩, and pull out the hinge stand ⑳.
- (9) Remove three remaining screws ㉑ which are keeping the motor on the motor bracket ㉒, and remove the connector off the Stepping Motor ㉓.
- (10) Remove two screws ㉔ on the Stepping Motor ㉓.

Note : The guide bracket ⑮ must be attached as shown in the following illustration:



The upper plate ③ must be attached as shown in the following illustration.



3.3.2 TQSB-2 PCB

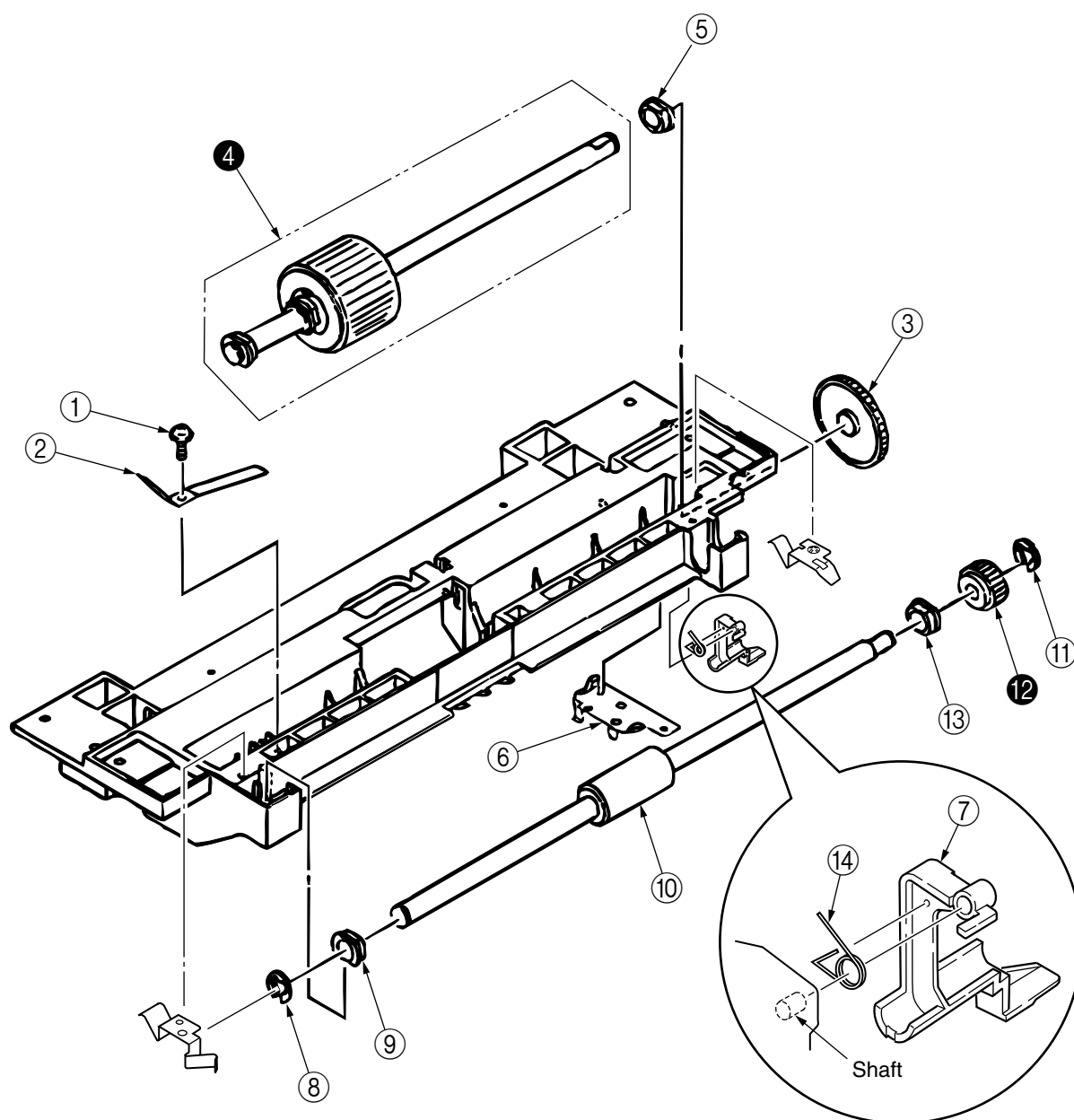
- (1) Remove the pulse motor (see 3.3.1).
- (2) Remove the connectors ⑳, ㉑ from the GRT PCB ㉒.
- (3) Remove the screw ㉓ and remove the GRT PCB ㉒.

Note : Refer to Detail A in the previous page.

3.3.3 Hopping Roller Shaft Assy and One-way Clutch Gear

- (1) Follow up to step (3) of 3.3.1 and remove the hopping frame assy.
- (2) Remove the screw ① and remove the earth plate ②. Remove the sensor lever (T) ⑦ and remove the transion spring ⑭ and remove the ground plate ⑥. Remove the gear ③ and remove the metal bush ⑤ and hopping roller shaft assy ④.
- (3) Remove the E-ring ⑪ and remove the one-way clutch gear ⑫ on the right side of the feed roller ⑩.

Note : The metal bush ⑬ also comes off. Be careful not to lose it.



The tension lever and the sensor lever need concurrent replacing.

4. TROUBLESHOOTING

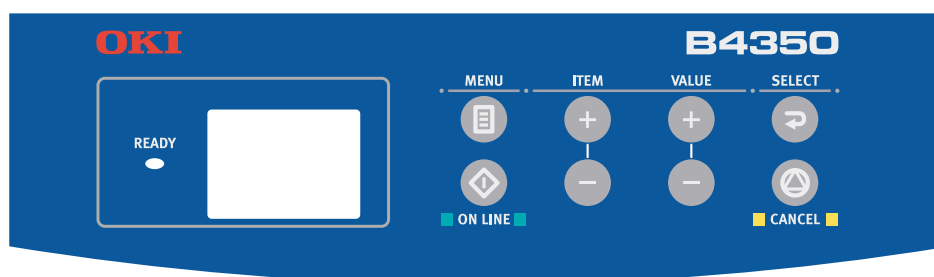
4.1 Precautions Prior to the Troubleshooting

- (1) Go through the basic checking items provided in the Printer Handbook.
- (2) Obtain detailed information concerning the problem from the user.
- (3) Go through checking in the conditions similar to that in which the problem occurred.

4.2 Preparations for the Troubleshooting





- (1) Display on the Operator panel
The status of the problem is displayed on the LCD (Liquid Crystal Display) on the Operator panel. Go through the appropriate troubleshooting procedures according to the messages displayed on the LCD.

[For ODA/OEL/AOS]



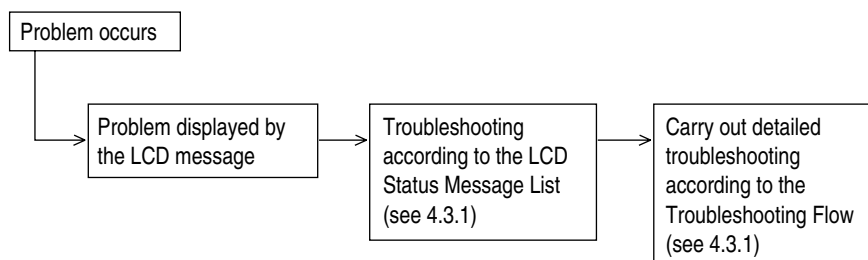
Status message display

Ready LED display

 : OFF	 : BLINKING
 : ON	 : Undefined

4.3 Troubleshooting Method







When a problem occurs, go through the troubleshooting according to the following procedure.



4.3.1 LCD Status Message List

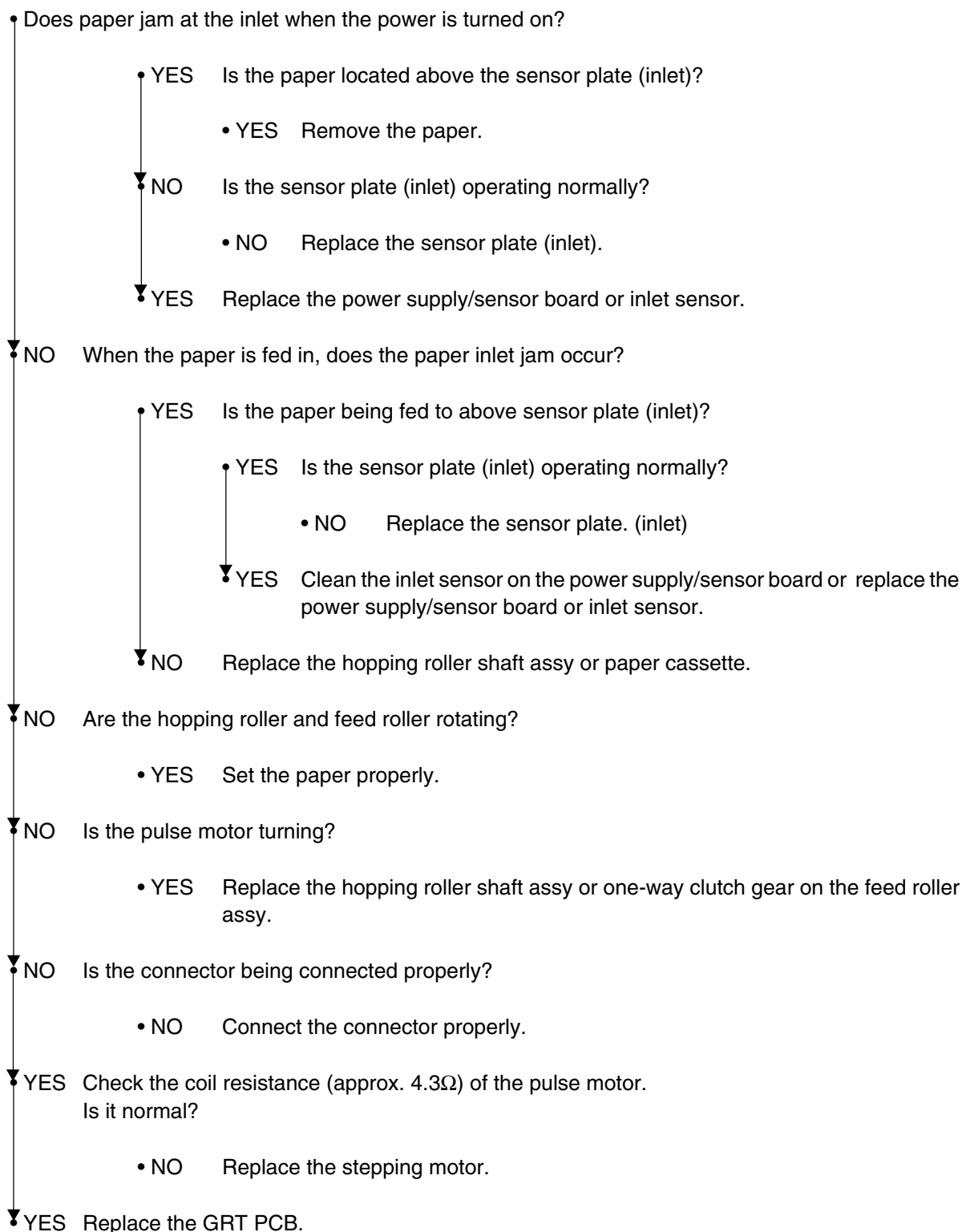
The listing of the statuses and problems displayed in the form of messages on the LCD is provided in Table 4-1.

Table 4-1

Classification	LCD Status Message	Description	Recovery method
Jam error (feeding)	 <div>OPEN UPPER COVER PAPER JAM</div>  <div>CHECK TRAY2 PAPER JAM</div>	<p>Notifies of occurrence of jam while the paper is being fed from High Capacity Second Paper Feeder.</p> <p>Scroll disply.</p>	<ul style="list-style-type: none"> Check the paper in the High Capacity Second Paper Feeder. <p>Carry out the recovery printing by opening and closing the cover, and turn the error display off.</p> <ul style="list-style-type: none"> When the problem occurs frequently, go through the Troubleshooting.
Jam error (ejection)	 <div>OPEN UPPER COVER EXIT JAM</div>	<p>Notifies of occurrence of jam while the paper is being ejected from the printer.</p> <p>Scroll disply.</p>	<ul style="list-style-type: none"> Check the paper in the printer. Carry out the recovery printing by opening and closing the cover, and turn the error display off.
Paper size error	 <div>OPEN UPPER COVER PAPER SIZE ERROR</div>	<p>Notifies of incorrect size paper feeding from High Capacity Second Paper Feeder.</p> <p>Scroll disply.</p>	<ul style="list-style-type: none"> Check the paper in the High Capacity Second Paper Feeder. Also check to see if there was a feeding of multiple sheets. <p>Carry out the recovery printing by opening and closing the cover, and turn the error display off.</p>
Tray paper out	 <div>LOAD mmmm TRAY2 EMPTY</div> <p>mmmm : Papre size (A4, Letter, Legal, etc.)</p>	<p>Notifies of no paper state of the High Capacity Second Paper feeder.</p> <p>Scroll disply.</p>	<ul style="list-style-type: none"> Load the paper in High Capacity Second Paper Feeder.
Paper size request	 <div>CHANGE PAPER TO mmmm/pppp TRAY2 SIZE MISMATCH</div> <p>mmmm : Papre size (A4, Letter, Legal, etc.)</p> <p>pppp : Media Type (Plain, Transparency, etc.)</p>	<p>Notifies of correct paper size for the High capacity Second Paper Feeder.</p> <p>Scroll disply.</p>	<ul style="list-style-type: none"> Load the requested size paper in the High Capacity Second Paper Feeder.

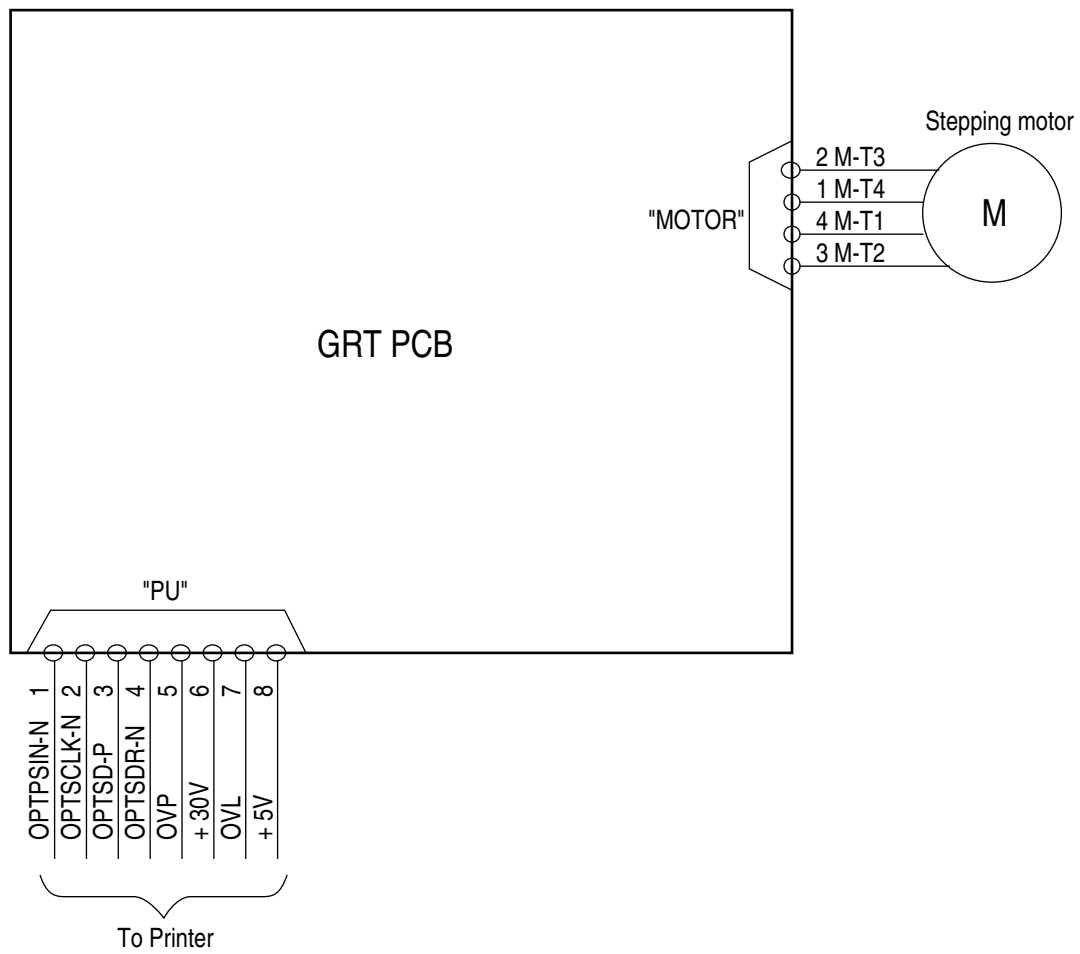
- (JAM error)

Paper Inlet Jam



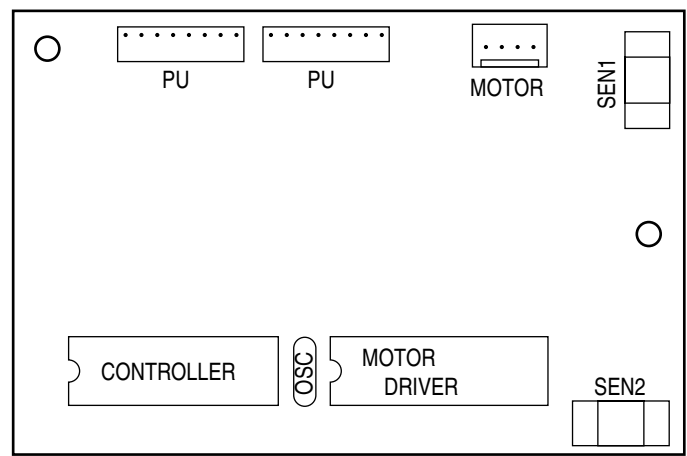
5. CONNECTION DIAGRAM

5.1 Interconnection Diagram



5.2 PCB Layout

GRT PCB



6. PARTS LIST

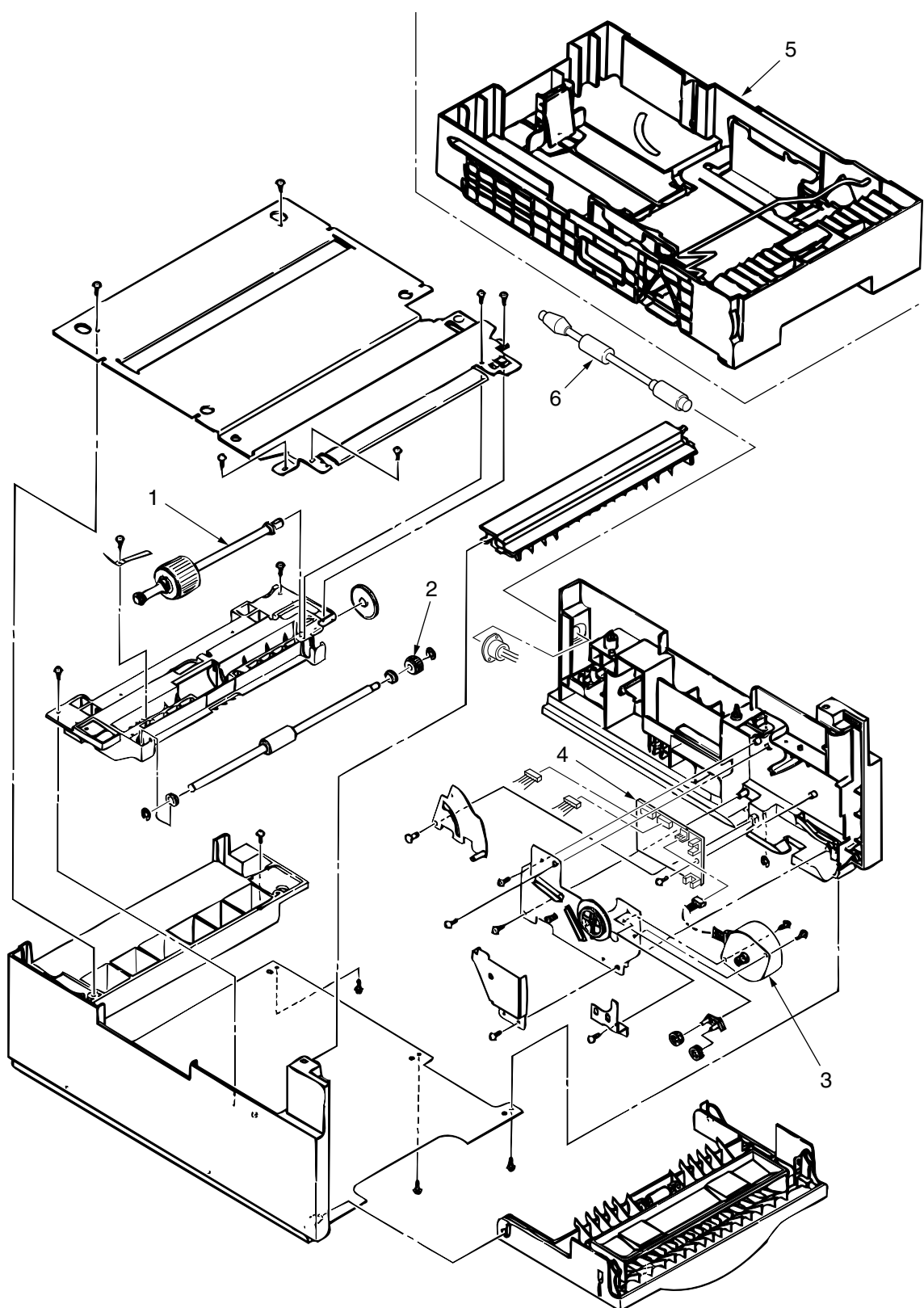
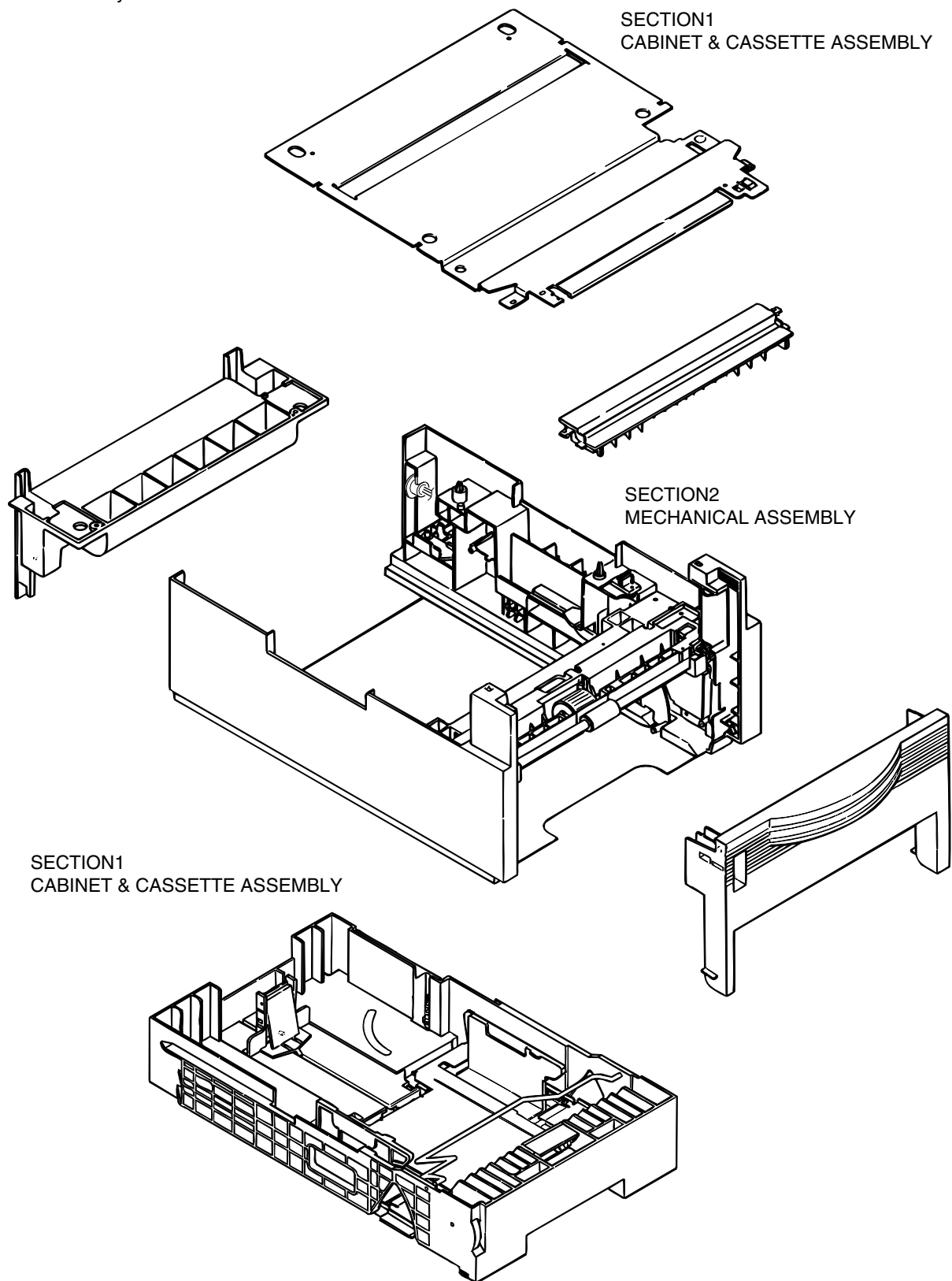


Figure 6-1 High Capacity Second Paper Feeder

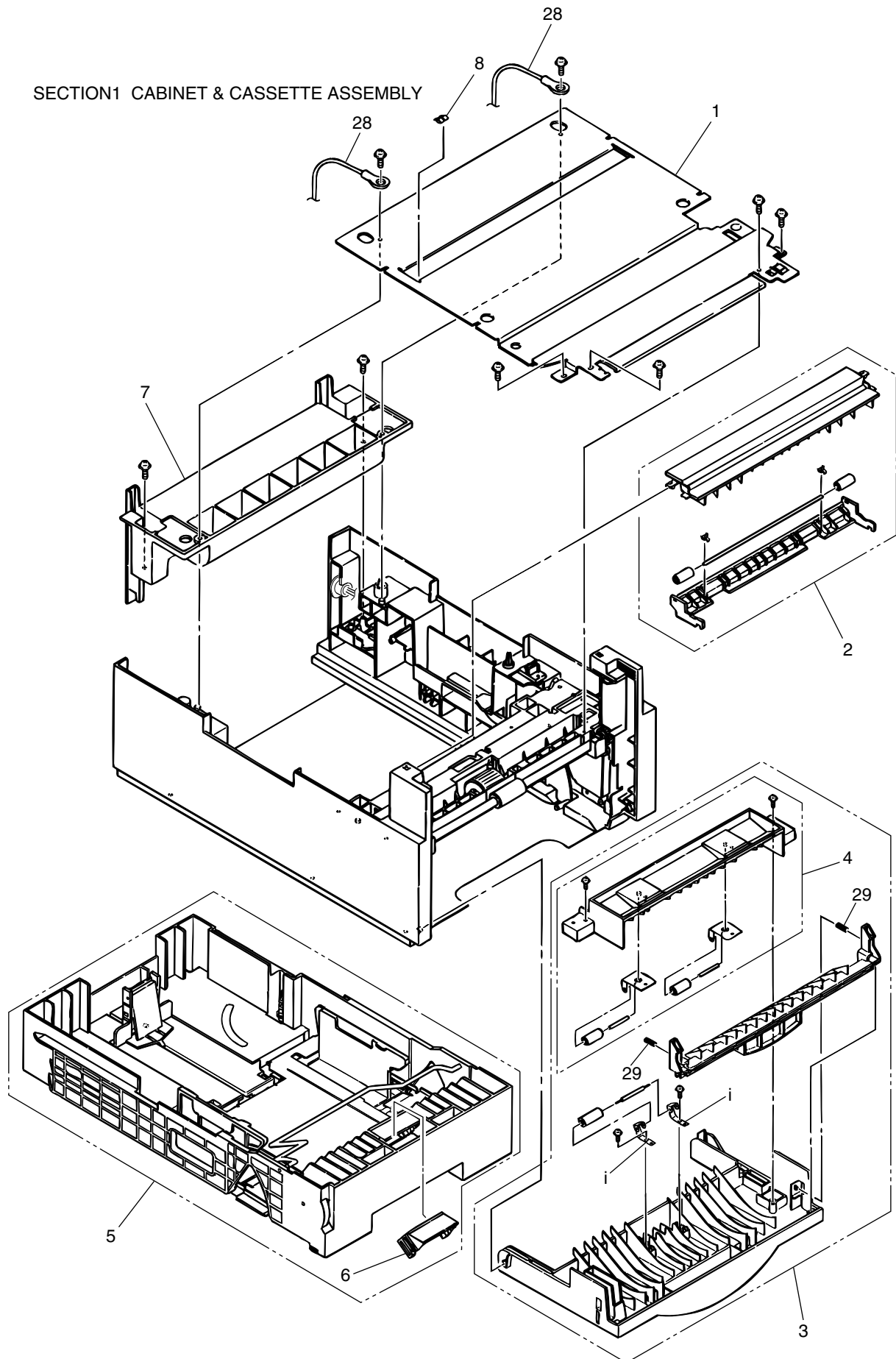
Table 6-1 High Capacity Paper Feeder

No.	Description	OKI-J Part No.	Q'ty	Remark
1	Hopping roller shaft assy	3PA4122-1367G001	1	
2	One-way clutch gear	4PB4122-1382P001	1	
3	Stepping motor	3PB4122-1399P001	1	
4	GRT PCB	42372702	1	
5	Cassette assy (2nd tray)	1PA4122-1362G004	1	
6	DIN8P-DIN8P Connector Cord	42372601	1	

2nd Tray ASSEMBLY



SECTION1 CABINET & CASSETTE ASSEMBLY



SECTION2 MECHANICAL ASSEMBLY

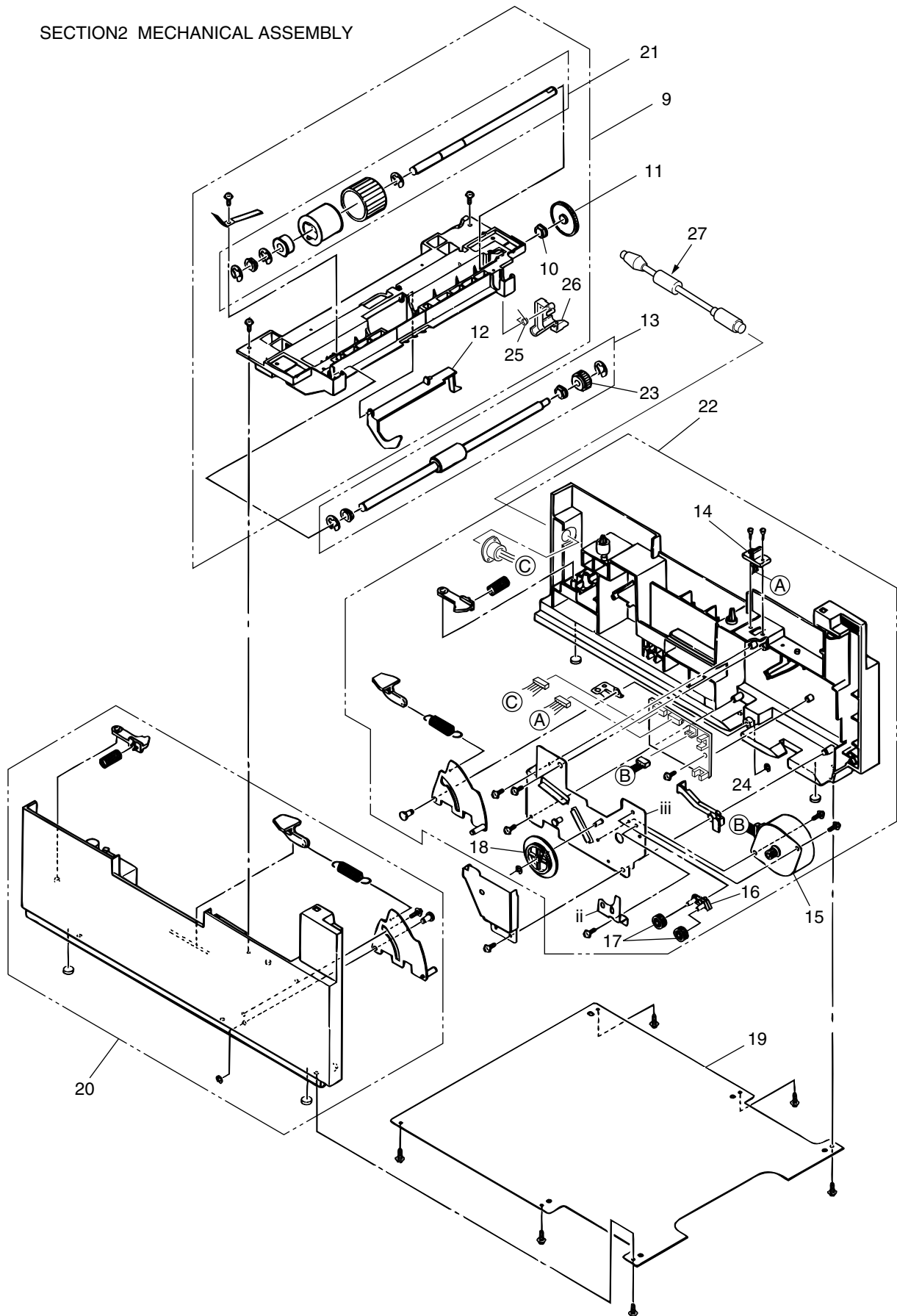
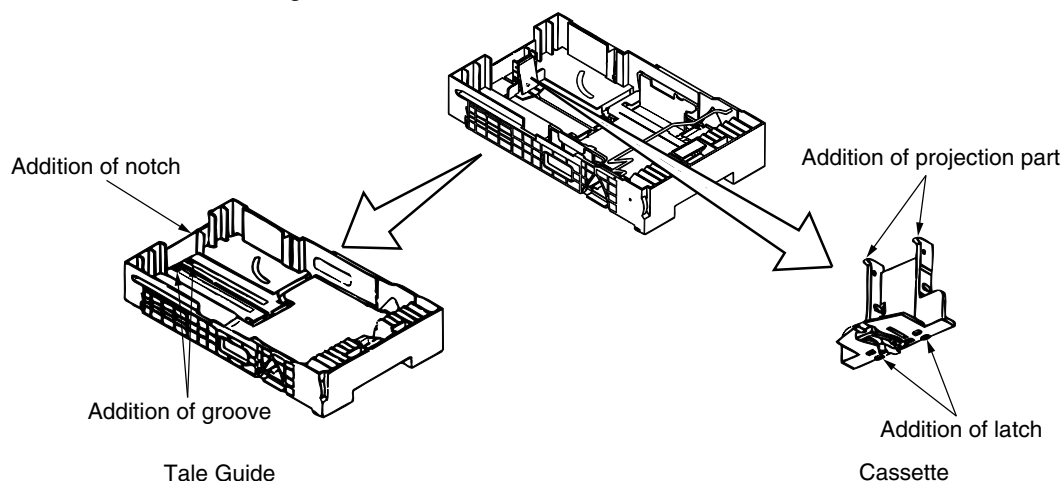


Table 6-2 2nd Tray Parts List

No.	Description	OKI Parts No.	Q'ty/U	500	1000	Remarks
1	Plate, upper	1PP4122-1401P001	1	3	5	
2	Sheet guide assembly	3PA4122-1370G001	1	3	5	
3	Front cover assembly	1PA4122-1369G001	1	3	5	
4	Inner guide assembly	3PA4122-1371G001	1	3	5	
5	Cassette assembly (2nd tray)	1PA4122-1362G004*	1	3	6	
6	Separation frame assembly	4PA4120-1009G001	1	6	12	
7	Cover, rear	1PP4122-1323P001	1	3	5	
8	Stick finger	4PB4122-1441P001	1	3	5	
9	Hopping flame assembly	1PA4122-1366G001	1	3	6	
10	Bush, metal (ADF)	4PP3522-3568P001	1	3	5	
11	Gear (z70)	4PP4122-1207P001	1	3	5	
12	Lever, sensor (p)	3PP4122-1331P001	1	3	5	
13	Feed roller assembly	3PA4122-1393G001	1	3	5	
14	Cable & connector	3YS4111-3528P001	1	3	5	
15	Stepping motor	3PB4122-1399P001	1	3	6	
16	Bracket	4PP4122-1384G001	1	3	5	
17	Gear (z24)	4PP4122-1383P001	2	3	5	
18	Gear (z87/z60)	4PP4122-1226P001	1	3	5	
19	Plate, bottom	2PP4122-1389P001	1	3	5	
20	2nd cassette guide (L) assy	1PA4122-1365G001	1	3	6	
21	Hopping roller assembly	3PA4122-1367G001	1	3	6	
22	2nd cassette guide (R) assy	42337801	1	3	6	
23	One-way clutch gear	4PB4122-1382P001	1	6	12	
24	Board-GRT	42372702	1	3	6	
25	Spring, Tension	41804801	1	3	6	
26	Lever, sensor (T)	PP4122-1416P001	1	3	6	
27	DIN8P-DIN8P Connection Cord	42372601	1	3	6	
28	Connection Cord	40890502	2	3	6	
29	Spring-Release	41204801	2	6	12	
	Spring-Release	43088901	2	6	12	ECO-B4250-017

* For the rev. no. of the Parts List for the Cassette assembly (2nd tray) should be applied No.10. The No.10 includes a change of cassette and Tale Guide.



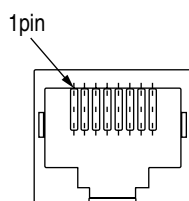
Note : Cassette and Tale Guide need concurrent replacing.

APPENDIX H NETWORK INTERFACE (OPTION)

- 1) Connector
 - 8-pin modular jack
- 2) Cable
 - 10BASE/T
- 3) Signal

Contact No.	Plug	Jack	Polarity
1	Power feeder3	–	+
2	Power feeder3	–	–
3	Send	Receive	+
4	Receive	Send	+
5	Receive	Send	–
6	Send	Receive	–
7	Power feeder2	Power feeder2	–
8	Power feeder2	Power feeder2	+

- 4) Appearance



- 5) Physical dimensions
 - a) Transmission method by CSMA/CD
 - b) Transmission protocol

Packet type	Support	Remarks
Ethernet II	○	
IEEE802.3	○	
IEEE802.3+IEEE802.2	○	
IEEE802.3+IEEE802.2+SNAP	○	

6) List of protocols

Protocol	Print	Configuration	Etc.
TCP/IP	LPR IPP FTP SMTP/POP3 HTTP(Except IPP)	HTTP Telnet FTP NetBEUI SNMP DHCP/BOOTP RARP AutoIP DNS UPnP SLP	TCP, IP, ICMP, ARP UDP
NetBEUI	SMB, CIFS	WINS	NetBIOS
NetWare	Q-Server over IPX Q-Server over IP R-Printer N-Printer	NCP SNMP	SPX, IPX, SAP, RIP
EtherTalk	PAP	NBP	ELAP, AARP, DDP, AEP, ZIP, RTMP, ATP

7) TCP/IP

a) Support OS

SunOS 4.1.1, SunOS 4.1.2, SunOS 4.1.3
 Solaris 2.1, Solaris 2.2, Solaris2.4, Solaris2.5
 HP-UX 9.X
 Windows3.0+TCP/IP
 Windows3.1+TCP/IP
 Windows3.11+TCP/IP
 Windows95/98
 WindowsNT 3.5+TCP/IP
 WindowsNT 3.5.1
 WindowsNT 4.0
 Windows2000
 WindowsXP

b) LPR

The LPR is an application to process the print data.

The LPR of this system supports multiple clients. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
Number of clients connected	1 to 8 clients	1 to 8 clients	indicates the number of clients which can be connected simultaneously. Allows simultaneous connection of a maximum of four clients.

First command character	LPR option	Objective	Support
H	Specify by default.	Host name of the machine to which the LPR is called. Host name printed on the banner sheet	○
P	Specify by default.	Log-in name of the user having called the LPR. User name printed on the banner sheet	○
J	Specify by -J option.	Job name printed on the banner sheet Default: File name	○
C	Specify by -C option.	Job type printed on the banner sheet Default: System name	○
L	Specify by default. Cancel the specification by -h option.	Specify literal banner sheet printing.	○
f	Specify the number of volumes by -# option.	Name of the data file to be printed. The number of character strings of this command varies according to the number of volumes. (Not supported)	○
U	Specify by default.	Name of the file to be deleted with completion of printing	—
I	Specify by -i option.	Number of indent characters in the output line	—
W	Specify by -w option.	Specify page width.	—
M	Specify by -m option.	Specify sending of a mail with completion of printing	—
S	Specify by -s option.	Specify the symbolic link to the data file.	○
1/2/3/4	Specify by -1/-2/-3/-4 options.	Specify the font.	—

c) FTP

FTP is an application to process the print data.

The FTP of this system supports multiple of clients. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
Number of clients connected		1 to 8 clients	Indicates the number of clients which can be connected simultaneously. Allows simultaneous connection of a maximum of four clients.

d) Telnet

Telnet is an application to reference and change the menu of the Network/Printer.

The TELNET of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client. But it cannot provide two or more simultaneous connections for super users.

Item	Factory default	Setup range	Description
Number of connected clients		1 client	Indicates the number of clients which can be connected simultaneously. Allows simultaneous connection of a maximum of four clients.
Terminal mode	VT-100	VT-100	Indicates the control mode of the terminal of the connected client. Only the VT-100 alone is the support terminal mode.
Number of columns	80 columns	80 columns	Indicates the number of the digits of the terminal of the connected client. The number of the support digits is fixed at 80.
Number of rows	25 rows	25 rows	Indicates the number of the digits of the terminal of the connected client. The number of the support digits is fixed at 25.
Expiration of idle time	300 sec.	60 to 7200 sec.	Indicates the time when the idle time of the connected clients expires.

e) HTTP

The HTTP is an application to reference and change the menu of the Network/Printer.

The HTTP of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client.

Item	Factory default	Setup range	Description
HTTP Version	1.0	1.0	Indicates the version of the HTTP being implemented.

f) SNMP

SNMP is an application to reference and change the menu of the Network/Printer.

The SNMP of this system supports simultaneous connection of multiple clients for the personal user. Furthermore, it provides multiple connections for one client.

8) Netware

a) Support OS

Netware File Server 2.2C, 3.X,4.X,5 (Bindery Model/ NDS support)

b) R-printer

The R-printer is an application to process the print data.

The R-printer of this system supports multiple print serves. Furthermore, it provides one connection for one printer server; it does not allow multiple connections for one printer server.

Item	Shipment from factory	Setup range	Description
Number of connected print serves		1 to 8 servers	"Indicates the number of print servers which can be connected simultaneously. Each print server need not be started in advance. Even when the printer is ready for operation, connection is achieved only by starting the print server."
Print Server Name	Olxxxxxx Etherxxxxxx	Maximum four servers *Maximum 31 characters	Indicates the name of the connected print server. Each print server name can be registered up to a maximum of 31 characters. The default xxxxxx of the print server name is set to the lower three bytes of the MAC address of the print server. Overseas: Olxxxxxx OEM: Etherxxxxxx The print server name must be preset on a NetWare server using a Novell tool.
Printer Name	(Print Server Name)-prn1		Takes the form of the above server name followed by -prn1, by default.
Job Time out	10	4-255 seconds	A timeout value that functions only when a specific size job is received.

c) Q-Server

The Q-Server is an application to process the print data.

The Q-Server of this system supports multiple file serves. Furthermore, it allows connection of multiple print servers for one file server.

Item	Shipment from factory	Setup range	Description
Number of connected print serves		1 to 8 servers	Indicates the number of print servers which can be connected simultaneously. Each print server need not be started in advance. Even when the printer is ready for operation, connection is achieved only by starting the print server.
Print Server Name	Olxxxxxx Etherxxxxxx	Maximum four servers *Maximum 31 characters	Indicates the name of the connected print server. Each print server name can be registered up to a maximum of 31 characters. The default xxxxxx of the print server name is set to the lower three bytes of the MAC address of the print server. Overseas: Olxxxxxx OEM: Etherxxxxxx The print server name must be preset on a NetWare server using a Novell tool.
Printer Name	(Print Server Name)-prn1		Takes the form of the above server name followed by -prn1, by default.
File Server Name	NULL	Maximum four servers *Maximum 47 characters	Entered with the name of a connecting file server. The file server is that whose settings have been set using a Novell tool. The entry of this file server name is optional. When the field is left blank, SoftNIC can automatically discover and connect a file server to connect to.
Password for File servers	NULL	Maximum 31 characters	Entered with a password for the connection to a file server. The password must be preset on a NetWare server using a Novell tool. When this field, which is optional, is left blank, no password is used for connection to a file server. In such cases, the password for the file server must not be set on the file server.
Job Polling Rate	4	2-255 seconds	Specified with a time interval for checking whether a job occurs. When this field, which is optional, is left blank, the default four seconds takes effect.

9) EtherTalk

a) Support OS

System7.0, 7.1, 7.1.X

System7.5, 7.5.1, 7.5.2, 7.5.3, 7.5.5

MAC OS7.6, 8.X, 9

b) PAP

The PAP is an application to process the print data.

Item	Factory default	Setup range	Description
Number of connected clients	1 client	1 client	Indicates the number of clients which can be connected simultaneously. Simultaneous connection is possible up to one client.
Printer name	B4300	One item by max. 32 characters	Indicates the printer name which can be set on the printer.
Zone name		One item by max. 32 characters	Indicates the zone to which the printer belongs.

10) NetBEUI

a) Support OS

Windows95/98

WindowsNT4.0

Windows2000

b) NetBIOS

Item	Factory default	Setup range	Description
Host name	OLxxxxxx MLxxxxxx	1 to 15 characters	Indicates the NetBIOS Host name. OL: Overseas machines ML: Japan Domestic machines xxxxxx is the last six digits of the MAC address.
Work Group name	Print Server	1 to 15 characters	Indicates the NetBIOS Work Group name.

11) OKI Original Port

The OKI Original Port provides special processing which is beyond the scope of normal menu operation.

Item	Description
Initial recognition	Executes the processing of finding out the printer by the setup utility when the printer is connected to the network.
Flash Down Load	Provides download processing of the program for the flash ROM.
PJL command /response	Serves as a PJL port to send and receive the PJL command.

12) Others

a) Hot Protocol

The Hot Protocol provides a function of simultaneous meeting of requests for connection from multiple clients using different transport layer protocols.

b) Multi-user

The Multi-user provides a function of simultaneous meeting of requests for connection from multiple clients using the same transport layer protocol.

c) Permissible connection

	Number of connections	Remarks
Total number of connections	10	
Number of connections for simultaneous use of management APs (Telnet, SMP, Web, OKI Original Port)	2	
Number of connections for simultaneous use of printing APs	8	

13) Setup

Each setup item can be set by the menu and network management tool.

Classification	Setup item	Menu change	Management tool change	Description
Common	Network valid/invalid	<input type="radio"/>	<input type="radio"/>	Valid/invalid for entire network
	Frame type	X	<input type="radio"/>	Frame type for transmission and reception
TCP/IP	TCP/IP valid/invalid	<input type="radio"/>	<input type="radio"/>	TCP/IP valid/invalid
	IP address	<input type="radio"/>	<input type="radio"/>	
	IP subnet mask	<input type="radio"/>	<input type="radio"/>	
	Default gateway	<input type="radio"/>	<input type="radio"/>	
Netware	Netware valid/invalid	<input type="radio"/>	<input type="radio"/>	Netware valid/invalid
	Netware mode	X	<input type="radio"/>	R-Printer/Q-server
	Network address	X	X	
	Q-server print server name	X	<input type="radio"/>	
	Q-server connection file server name	X	<input type="radio"/>	
	Q-server polling rate	X	<input type="radio"/>	
	NDS Tree name	X	<input type="radio"/>	
	NDS Context name	X	<input type="radio"/>	
	R-Printer printer name	X	<input type="radio"/>	
	R-Printer connection print server name	X	<input type="radio"/>	
NetBEUI	NetBEUI valid/invalid	<input type="radio"/>	<input type="radio"/>	NetBEUI valid/invalid
	Net BIOS Host name	X	<input type="radio"/>	
	NetBIOS Work Group name	X	<input type="radio"/>	
AppleTalk	EtherTalk valid/invalid	X	<input type="radio"/>	EtherTalk valid/invalid
	printer name	X	<input type="radio"/>	
	Ether Talk zone nameSpecify by -1/-2/-3/-4 options.	X	<input type="radio"/>	Name of the zone to which the printer belongs
	Ether Talk Printer name	X	<input type="radio"/>	Name of the printer